

**THE UNIVERSITY OF WESTERN ONTARIO**  
**School of Kinesiology**

**Kinesiology 4482A**  
**Perceptual-motor Performance/Learning**  
**2016 (Fall Term)**

**Instructor :**Dr. Eric Buckolz  
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**Location:** Arts & Humanities 1B02

**Lectures:** MWF, 1:30-2:20

**Office Hours:** by appointment

**Course TA:** TBA

**Anti-requisites:** *Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.*

**Note:** Academic Offenses: Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site: <http://www.uwo.ca/univsec/handbook/appeals/scholoff.pdf>

**Course Conduct**

The course aims to consider a variety of volitional and automatic processing abilities and to apply the properties of such processing to the understanding of human performance, both with regard to sport and to other everyday tasks.

The Friday class will typically be a lecture; however, on some occasions, it may be used for tutorial purposes. For the most part, tutorials will serve the function of attempting to clear up difficulties associated with the lecture material. The class will be informed a week in advance when a tutorial class is to be held.

No term papers are required.

**Recommended Text:** No text is required. All material relevant to this course will be covered in class.

## Cell Phone Use

Evidence shows that texting is a distraction to classmates who are not texting. For this and other reasons, cell phone use during the class is **NOT PERMITTED**. Should an emergency arise during class, please leave the room and do what is needed. It follows that the use of laptop computers in class is permitted for note taking only.

## **Course Evaluation**

Mid-term Test (40%). This term test usually occurs after approximately 5 weeks of classes. It will contain short-answer and medium length questions; **no** multiple, nor true and false questions will be used. Class input will be sought when establishing the exact date of this test; however, the date selected will be ultimately determined by the class instructor. **NOTE: there will be NO make-up mid-term test.** Those unable to write the mid-term due to acceptable circumstances will have their final examination value elevated to 100%.

Final Examination (60%). This examination will be held during the final examination schedule and will be of the same format as that for the term test with the exception that some questions may require more lengthy responses. This examination will be cumulative; however, it will emphasize material covered subsequent to the term test. Normal practice is that no more than 10% of the final examination will involve material that was relevant for the term test.

## **Course Content**

Only topical outlines are presented below. Reference material for these topics may be available from the instructor upon request, however, a difficulty in this regard has to do with the fact that such material is often written for a more sophisticated audience. Some of the topics listed below may be replaced by other issues at the discretion of the instructor and the order in which these topics is covered is flexible.

### **I. Temporal Uncertainty**

[i] Time estimation ability: is briefly covered in order to understand the role of time estimation in simple reaction time tasks [e.g., effect of time length being judged; knowledge of results (KR) and verbal mediation impacts on timing ability].

[ii] Simple reaction time tasks: simple RT tasks are anything but, and are used here to illustrate various processing properties. Sub-topics include:

- (a) anticipations (use in sport) vs. legitimate reactions,
- (b) properties of preparation,
- (c) SRT-foreperiod relationships for various foreperiod distributions are considered, including sport application,

(d) use of SRT tasks in assessing attention demands (see probe tasks, attentional set and SRT data),

(e) SRT and ageing — implications for processing change as we age,

## 2. **Event Uncertainty** (choice reaction time [CRT]; factors affecting)

[i] Information Theory (used to control uncertainty size), impact on CRT. Application.

[ii] Probability/Prediction (prediction outcome effect — application;

(a) response conflict exists and takes time to resolve [see Herman, Simon effect, Flanker effect],

(b) Activation-Inhibition relationship)

[iii] Practice Effects (Grabo: target recognition) - application

[iv] Speed/Accuracy Trade-off

[v] Stimulus-Response Compatibility Degree

## 3. **Attention**

- Allocated - volitionally
  - > To locations: spatial precue effect (SPE) [see children with DCD]
  - > Means of filtering
  - > Assessing Attention Demands (probe task, PRP task) — cell phones, automation
- Attracted — unintentionally, automatically
  - + To locations — see inhibition of return (IOR) tasks
  - + Familiar events
  - + Thoughts

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## 4. **Cognitive Inhibition**

### (a) **Concurrent Inhibition Effects**

- adding a prime-trial or probe-trial distractor in SNP tasks — see above.
- Response conflict [definition; factors affecting (activation degree, R-R compatibility); escaping response conflict]. **e.g.**, Flanker task, Simon effect.

### (b) **Inhibitory After-Effects**

Spatial Negative Priming (SNP)- location-based tasks. A close look at how we process information that we are told to ignore (distractor events).

- Inhibitory After-effects in location-based tasks
- Impact of sensory system on SNP cause (visual, auditory, tactile)
- Cause (response but not location inhibition, M: 1 location-response mappings)
- Preventing Inhibitory after-effects (probe distractor frequency; IR trial probability)
- Practice influence on inhibitory after-effects of which there are 4 (SNP, greater error for IR than for control trials, selection-against former distractor responses, error protection on control trials)
- Masked Primes (subliminal processing) — automatic processing
- Negative Compatibility Effect (cause, masking) — subliminal processing; adaptability of subliminal processing (time permitting).
- Inhibition-of-Return (IOR) — peripheral location effects (time permitting).

### (c) Special Populations and Inhibition Characteristics

- Children with DCD (Simon effect tasks, Spatial precue tasks)
- Aging population (is cognitive inhibition preserved with age?)

## 5. Free-choice Behaviour

Free-choice refers to when several permissible responses can be used in response to a single stimulus. Such instances are evident in everyday behavior and so are worthy of study. In particular, we want to know what factors influence someone's free-choice response selection — why chose one response over another.

- The question is just how 'free' is 'free-choice'? What are the response selection determinants in free choice?
- Does free choice behavior change as we age?

## 6. Automation

- \* 'n' no longer has RT effect
- \* Inability to Prevent Processing Property (Simon effect, Flanker effect, Stroop effect, central distractor items, peripheral precues)
- \* Lack of Awareness (masked events; Graboi; see cognitive inhibition)
- \* reduced attention needs
- \* does automatic mean inevitable (can automatic be intentionally influenced?)?

## **6. Knowledge of Results (KR)**

- \* Error recognition and performance retention
- \* Embedded blank trials

## **7. Advance Cue Utilization in Sport**

- \* Methods, Results, Implications

## **8. Preparation**

This is a general topic which comes up in many of the sections listed above. Hence, it is not a section of this course which is confronted in an isolated unit but is one which accumulates information throughout the course.

Preparation types, longevity, rise time; RT influence.

### **Course/University Policies**

1. **Lateness/Absences:** Assignments are due at the beginning of class on the assigned due date and will not be accepted late, except under medical or other compassionate circumstances. Electronic submission of assignments will not be accepted (unless otherwise specified) under any circumstances. Submitting a late assignment without appropriate documentation will result in a zero (0) grade. Appropriate documentation for assignments worth less than 10% should be submitted to the Undergraduate office. A missed mid-term examination without appropriate documentation will result in a zero (0) grade. The course policy is not to allow make-ups for scheduled midterms, presentations or final exams, nor to assign a grade of Incomplete without acceptable and verifiable medical (or equivalent compassionate) reasons. Acceptable reasons might include hospital stays, serious illness, family emergencies (like serious accidents or illness, death) or similar circumstances.
2. **Written documentation:** Whenever possible, students who require academic accommodation should provide notification and documentation in advance of due dates, examinations, etc. stating specific reasons and dates. Students must follow up with their professors and their Academic Counselling office in a timely manner. Documentation for any request for accommodation shall be submitted directly, as soon as possible, to the appropriate *Academic Counselling Office* of the student's Faculty/School of registration not to the instructor, with a request for relief specifying the nature of the accommodation being requested. This documentation should be obtained at the time of the initial consultation with the physician or walk-in clinic. These documents will be retained in the student's file, and will be held in

confidence in accordance with the University's Official Student Record Information Privacy Policy.

3. See <https://studentservices.uwo.ca/secure/index.cfm> for specific policy and forms relating to accommodation.

4. **Scholastic offences:** They are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

[http://www.uwo.ca/univsec/handbook/appeals/scholastic\\_discipline\\_undergrad.pdf](http://www.uwo.ca/univsec/handbook/appeals/scholastic_discipline_undergrad.pdf).

5. **According to the Examination Conflict policy**, "A student who is scheduled to write more than two examinations in any 24-hour period may request alternative arrangements through the office of their Academic Counsellor." *\*This policy does NOT apply to mid-term examinations.* There will be no make-up for the mid-term exam. Students who miss this exam with a valid reason will have the final re-weighted accordingly.

6. **Classroom Behaviour:** Class will begin promptly at the time specified at the top of page one of this syllabus. In the event that you must arrive late, please enter the classroom with a minimal disturbance to the class. I reserve the right to lock the classroom door and deny entrance if lateness becomes a common occurrence. Excessive talking during class time is disruptive, disrespectful, and will not be tolerated. Students engaging in such behaviour may be asked to leave the room. Cellular phones, pagers, and text-messaging devices are disruptive when they ring in class. If you must bring these with you, please place them on silent mode or turn them off during class. Failure to do so may result in your being asked to leave.

7. Laptops for the **purpose of typing lecture notes** are permitted in class, but please be respectful to your fellow students and turn the sound off. If I receive complaints from other students regarding noise or other disruptive behaviour (e.g., watching videos on YouTube.com, updating your Facebook status, playing Solitaire), your classroom laptop privileges will be revoked.

8. Audio and/or videotaping of lectures is not permitted unless approval has been sought from the instructor in advance.

## **STUDENT CODE OF CONDUCT**

The purpose of the Code of Student Conduct is to define the general standard of conduct expected of students registered at Western University, provide examples of behaviour that constitutes a breach of this standard of conduct, provide examples of sanctions that may be imposed, and set out the disciplinary procedures that the University will follow. For more information, visit

<http://www.uwo.ca/univsec/board/code.pdf>

### **ENGLISH PROFICIENCY FOR THE ASSIGNMENT OF GRADES**

Visit the website <http://www.uwo.ca/univsec/handbook/exam/english.pdf>

### **SUPPORT SERVICES**

There are various support services around campus and these include, but are not limited to:

1. Student Development Centre -- <http://www.sdc.uwo.ca/ssd/>
2. Student Health -- <http://www.shs.uwo.ca/student/studenthealthservices.html>
3. Registrar's Office -- <http://www.registrar.uwo.ca/>
4. Ombuds Office -- <http://www.uwo.ca/ombuds/>