**Course Description:** ENV H 566 / IND E 566 / NSG 508 (Three Quarter Credits). Basic principles of ergonomics in the work environment applied the worker. Topics include musculoskeletal disorders, assessing physical exposure in the workplace, workplace and work tool design, evaluating lifting and material handling activities, applied biomechanics, and implementing ergonomic programs.

**Prerequisites:** Basic human anatomy and physiology or permission of instructor

**Location and Time:** Thursdays 9:30 – 12:20 SIG 230

**Instructors:** Peter Johnson, PhD; Professor, Department of Environmental and Occupational Health Sciences, phone: 221-5240; e-mail: petej@uw.edu

**Office Hours:** Drop in or by appointment, 4225 Roosevelt Way NE, Room 120


Supplemental reading materials to be distributed electronically on class website

**Class Website:** https://canvas.uw.edu/courses/112564

**Learning Objectives:** At the end of this course, the student will be able to:

1. Identify and be familiar with the physical, individual and organizational factors which can contribute to musculoskeletal disorders.

2. Identify and be familiar with common musculoskeletal disorders which can result from occupational activities.

3. Identify and be familiar with the structure and anatomy of the upper extremities and low back

4. Use various assessment tools to identify and evaluate various upper extremity hazards in the workplace.

5. Use various assessment tools to identify and evaluate lifting and manual material handling activities:

6. Identify ergonomic hazards and implement solutions in office and manufacturing environments.

7. Use various economic techniques to identify, propose and justify implementing ergonomic solutions in the workplace.

8. Be able to set-up, establish and maintain a workplace ergonomics program

**Grading:** 10% Class participation, 15% Homework, 20% Midterm Exam, 25% Research Assignment, 30% Final Exam

**Final:** Wednesday, March 15, 2017, 10:30-12:20, HST (http://www.washington.edu/students/maps/map.cgi?HST) T663

**Changes:** The instructor reserves the right to make changes to the syllabus during the course. Any
necessary changes will be announced in class and posted on the class website.

**Access and Accommodations**: Your experience in this class is important to us, and it is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law. If you experience barriers based on a disability or temporary health condition, please seek a meeting with DRS to discuss and address them. If you have already established accommodations with DRS, please communicate your approved accommodations to your instructor at your earliest convenience so we can discuss your needs in this course.

Disability Resources for Students (DRS) 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 DRS. If you have not yet established services through DRS, but have a temporary health condition or permanent disability that requires accommodations (this can include but not limited to; mental health, attention-related, learning, vision, hearing, physical or health impacts), you are welcome to contact DRS at 206-543-8924 or uwdrs@uw.edu (mailto:uwdrs@uw.edu) or disability.uw.edu (http://depts.washington.edu/uwdrs/).

**Academic Integrity Statement** - Students at the University of Washington (UW) are expected to maintain the highest standards of academic conduct, professional honesty, and personal integrity.

The UW School of Public Health (SPH) is committed to upholding standards of academic integrity consistent with the academic and professional communities of which it is a part. Plagiarism, cheating, and other misconduct are serious violations of the University of Washington Student Conduct Code (WAC 478-120). We expect you to know and follow the university's policies on cheating and plagiarism, and the [SPH Academic Integrity Policy](http://sph.washington.edu/students/academicintegrity/). Any suspected cases of academic misconduct will be handled according to University of Washington regulations. For more information, see the University of Washington Community Standards and Student Conduct website.

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### Course Summary:

<table>
<thead>
<tr>
<th>Date</th>
<th>Details</th>
<th>Time</th>
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<tbody>
<tr>
<td>Thu Jan 4, 2018</td>
<td><a href="https://canvas.uw.edu/calendar?event_id=1079698&amp;include_contexts=course_1126564">No Class - Cascadia Public Health Meeting</a></td>
<td>9:30am to 12:20pm</td>
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<td><a href="https://canvas.uw.edu/calendar?">Intro and Anthro</a></td>
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<tr>
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<td>Event Title</td>
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<td>Thu Jan 11, 2018</td>
<td><a href="https://canvas.uw.edu/calendar?event_id=1079694&amp;include_contexts=course_1126564">Assignment #1 - Anthropometry: Good and Bad Design</a></td>
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<td><a href="https://canvas.uw.edu/calendar?event_id=1079693&amp;include_contexts=course_1126564">Assignment #2 - Safety Shower</a></td>
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<td>Thu Jan 18, 2018</td>
<td><a href="https://canvas.uw.edu/calendar?event_id=1079682&amp;include_contexts=course_1126564">Low Back - Part I</a></td>
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<td><a href="https://canvas.uw.edu/calendar?event_id=1079692&amp;include_contexts=course_1126564">Assignment #3 - Job Application</a></td>
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<td><a href="https://canvas.uw.edu/calendar?event_id=1079691&amp;include_contexts=course_1126564">Assignment #4 - Statics</a></td>
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<td>Thu Jan 25, 2018</td>
<td><a href="https://canvas.uw.edu/courses/1126564/assignments/3957176">Assignment #1 - Ergonomics and Anthropometry in Design</a></td>
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<td><a href="https://canvas.uw.edu/courses/1126564/assignments/3957177">Assignment #2 - Anthropometry, Safety Shower</a></td>
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<td><a href="https://canvas.uw.edu/calendar?event_id=1079683&amp;include_contexts=course_1126564">Low Back Part II</a></td>
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<td><a href="https://canvas.uw.edu/courses/1126564/assignments/3957178">Assignment #3 - Job Application</a></td>
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<td><a href="https://canvas.uw.edu/calendar?event_id=1079697&amp;include_contexts=course_1126564">Assignment #5 - Lifting Problem</a></td>
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<td>Thu Feb 1, 2018</td>
<td><a href="https://canvas.uw.edu/calendar?event_id=1079689&amp;include_contexts=course_1126564">Upper Extremities</a></td>
<td>9:30am to 12:20pm</td>
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<td><a href="https://canvas.uw.edu/courses/1126564/assignments/3957179">Assignment #4 - Static Analyses</a></td>
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<td><a href="https://canvas.uw.edu/courses/1126564/assignments/3957180">Assignment #5 - Lifting Analysis</a></td>
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<td>Thu Feb 8, 2018</td>
<td><a href="https://canvas.uw.edu/calendar?event_id=1079687&amp;include_contexts=course_1126564">Midterm and Hand Arm Vibration</a></td>
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<td><a href="https://canvas.uw.edu/courses/1126564/assignments/3957185">Midterm</a></td>
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Assignment #6 - Ergonomic Websites
[https://canvas.uw.edu/calendar?event_id=1079695&include_contexts=course_1126564] (12:20pm)

Midterm Extra Credit
[https://canvas.uw.edu/courses/1126564/assignments/3957186] (due by 12:30pm)

Upper Extremity Assessment Tools
[https://canvas.uw.edu/calendar?event_id=1079686&include_contexts=course_1126564] (9:30am to 12:20pm)

Assignment #7 - Upper Extremity Analysis
[https://canvas.uw.edu/calendar?event_id=1079690&include_contexts=course_1126564] (12:30pm)

Assignment #6 - Ergonomic Websites
[https://canvas.uw.edu/courses/1126564/assignments/3957181] (due by 12:40pm)

Hand Tool Design and Cost Justification - No Class Flipping the Classroom
[https://canvas.uw.edu/calendar?event_id=1079685&include_contexts=course_1126564] (12am)

Assignment #7 - Upper Extremity Analysis
[https://canvas.uw.edu/courses/1126564/assignments/3957182] (due by 12:40pm)

Targeted Research Presentations
[https://canvas.uw.edu/calendar?event_id=1079684&include_contexts=course_1126564] (9:30am to 12:20pm)

Targeted Research Presentations
[https://canvas.uw.edu/calendar?event_id=1079696&include_contexts=course_1126564] (9:30am to 12:20pm)

Final Grade
[https://canvas.uw.edu/courses/1126564/assignments/3957184] (due by 11:59pm)

Final
[https://canvas.uw.edu/courses/1126564/assignments/3957183]

Targeted Research Paper
[https://canvas.uw.edu/courses/1126564/assignments/3957187]

Targeted Research Presentation
[https://canvas.uw.edu/courses/1126564/assignments/3957188]