PSYC 302
Psychology of Pain
Fall, 2016

Time: Wednesday, 8:35–9:55 a.m.
Friday, 8:35–9:55 a.m.

Place: Stewart Biology Bldg., Room S1/4

Instructor: Dr. Jeffrey S. Mogil
Stewart Biology Bldg., Room N7/42
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Teaching Assistants: Sarah Rosen (srosen625@gmail.com)
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Grading Scheme: Midterm Exam 1: 22.5%
Midterm Exam 2: 22.5%
Final Exam (cumulative): 45%
Research Assignment: 10% (see page 5)

Office Hours: TAs: Wednesday or Friday, 10:00–11:00 a.m. (meet in class)
Prof.: By appointment (please e-mail first)

The two midterm and final exams will be of mixed format (multiple choice, fill-in, connectors, true/false, up-to-half-page short-answer; but no essay questions). The final exam will be cumulative, but weighted towards material covered after the second midterm exam. Students missing a midterm due to illness (a doctor's note is required) will have the remaining midterm count for 30% and the final exam count for 60%.

You have the opportunity to receive up to 1% extra credit through the Psychology Department Subject Pool. The subject pool TA will provide instructions and all questions/concerns about this credit will be dealt with through that TA (extracreditquestions.psychology@mcgill.ca).

There is no required textbook for this course. Lecture notes and required readings are all on the course website. We strongly recommend you print the lecture notes out and bring them to class; there is, however, no need to bring the readings to class.

Be reminded that McGill University values academic integrity, therefore all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see www.mcgill.ca/integrity for more information).

Lecture Schedule:

Date	Lecture #	Lecture Title	Associated Readings
Sept. 7, 14	**1**	Introduction to Pain -epidemiology -the importance of pain -what (and why) is pain?	[2,5,10]
Sept. 9	**2**	Guest Lecture: Dr. Marc O. Martel -opioids and the opioid crisis	[17]
Sept. 16, 21	**3**	Pain Treatment and Pain Research -past and current pain treatment -evidence-based medicine -what do pain researchers do?	[14,19,21]
Sept. 23, Oct. 5, 7	**4**	Pain Measurement in Humans and Animals -psychophysics and QST -ratings and questionnaires -preclinical assays	[6,11,18]
Sept. 28	**5**	Guest Lecture: Dr. Yoram Shir (and guest) -clinical case presentation	
Sept. 30		MIDTERM EXAM #1 (on material from Sept. 7 to Sept. 23)	
Oct. 12	**6**	Guest Lecture: Dr. Mathieu Roy -imaging -cognitive and emotional pain modulation	[3,15]
Oct. 14, 19	**7**	Organismic and Experiential Factors -individual differences -genetics, sex and age -the placebo effect	[4,12,13]
Oct. 21, 26, 28 Nov. 2	**8**	Pain Anatomy and Physiology -nociceptors -the dorsal horn -the "pain matrix" -gate-control theory -sensitization	[16,20]
Nov. 4		MIDTERM EXAM #2 (on material from Sept. 28 to Oct. 28)	

Lecture Schedule cont…:

Date	Lecture #	Lecture Title	Associated Readings
Nov. 9, 11, 16, 18	**9**	Pain Neurochemistry and Pharmacology -peripheral systems and NSAIDs -pain transduction and propagation -spinal cord neurochemistry -descending modulation and opioids -drug development	[1,16,20]
Nov. 23, 25	**10**	Pain Syndromes -acute-to-chronic transitioning -neuropathic pain -fibromyalgia -headache	[8,9]
Nov. 30		Overflow Lecture	
Dec. 2		REVIEW SESSION	

Full Citations of Readings:

[1] Argoff C. Mechanisms of pain transmission and pharmacological management. Curr Med Res Opin 2011;27:2019-2031.

[2] Aydede M, Guzeldere G. Some foundational problems in the scientific study of pain. Philos Sci 2002;69:1-17.

[3] Bushnell MC, Ceko M, Low LA. Cognitive and emotional control of pain and its disruption in chronic pain. Nat Rev Neurosci 2013;14:502-511.

[4] Doherty M, Dieppe P. The "placebo" response in osteoarthritis and its implications for clinical practice. Osteoarthritis Cartilage 2009;17:1255-1262.

[5] Elliot AM, Smith BH, Penny KI, Smith WC, Chambers WA. The epidemiology of chronic pain in the community. Lancet 1999;354:1248-1252.

[6] Haanpaa M, Attal N, Backonja M, Baron R, Bennett M, Bouhassira D, Cruccu G, Hansson P, Haythornthwaite JA, Iannetti GD, Jensen TS, Kauppila T, Nurmikko T, Rice ASC, Rowbotham M, Serra J, Sommer C, Smith BH, Treede R-D. NeuPSIG guidelines on neuropathic pain assessment. Pain 2011;152:14-27.

[7] Jamison RN, Serraillier J, Michna E. Assessment and treatment of abuse risk in opioid prescribing for chronic pain. Pain Res Treat 2011;2011:941808.

[8] May A, Schulte LH. Chronic migraine: risk factors, mechanisms and treatment. Nat Rev Neurol 2016;12:455-464.

[9] Melzack R. Phantom limbs. Sci Am 1992;266:120-126.

[10] Melzack R, Wall P. The Challenge of Pain (updated 2nd ed.). New York: Penguin, 1996.

[11] Mogil JS. Animal models of pain: progress and challenges. Nat Rev Neurosci 2009;10:283-294.

[12] Mogil JS. Pain genetics: past, present and future. Trends Genet 2012;28:258-266.

[13] Mogil JS. Sex differences in pain and pain inhibition: multiple explanations of a controversial phenomenon. Nat Rev Neurosci 2012;13:859-866.

[14] Mogil JS, Simmonds K, Simmonds MJ. Pain research from 1975 to 2007: a categorical and bibliometric meta-trend analysis of every Research Paper published in the journal, *Pain*. Pain 2009;142:48-58.

[15] Roy M, Wager TD. Neuromatrix theory of pain. Routledge Handbook of Philosophy of Pain, in press.

[16] Scholz J, Woolf CJ. Can we conquer pain? Nat Neurosci 2002;5, Suppl. 1:1062-1067.

[17] Sullivan MD & Howe CQ. Opioid therapy for chronic pain in the United States: promises and perils. Pain 2013;154:S94-S100.

[18] Turk DC, Melzack R. The measurement of pain and the assessment of people experiencing pain. In: DC Turk, R Melzack, editors. Handbook of Pain Assessment, 3rd ed. New York: Guilford Press, 2011.

[19] Turk DC, Wilson HD, Cahana A. Treatment of chronic non-cancer pain. Lancet 2011;377:2226-2235.

[20] Von Hehn CA, Baron R, Woolf CJ. Deconstructing the neuropathic pain phenotype to reveal neural mechanisms. Neuron 2012;73:638-652.

[21] Wiffen PJ, Derry S, Moore RA, Lunn MPT. Levetiracetam for neuropathic pain in adults. Cochrane Database Syst Rev 2014;7:CD010943.

Research Assignment Guidelines:

This assignment, worth 10% of the overall grade, is due by e-mail to psyc302pain@gmail.com by 5 p.m. on December 2nd. Please copy yourself to ensure that the e-mail was sent. **You are *also* required to hand in a hard copy (see below) in class on December 2nd**, which will serve as a "receipt". Assignments handed in up to one week late (5 p.m. on December 9th) will be graded out of 8% of the overall grade (i.e., a 2% penalty overall, or 20% of the assignment's weight). Assignments handed in after 5 p.m. on December 9h will receive a zero. You have essentially the entire Fall to do this assignment; there are no acceptable excuses for failure to hand something in by the final deadline.

Each student can choose *any* paper, on any topic, in the primary literature (i.e., no reviews or meta-analyses; only papers containing empirical data collected by the authors) published in a journal with the word "Pain" in its name (i.e., *Pain*, *Pain Physician*, *Journal of Pain*, *Regional Anesthesia & Pain Management*, *European Journal of Pain*, *Molecular Pain*, *Clinical Journal of Pain*, *Journal of Orofacial Pain*, *Journal of Pain & Symptom Management*, *Journal of Headache Pain*, *Pain Medicine*, *Pain Practitioner*, or *Pain Reports*) in any year from 2011 until 2016. **The assignment is to annotate the PDF version of this paper**, using the "Sticky Note" tool in Adobe Reader (free software) or Adobe Acrobat. Hyperlinks to other published papers, websites or student-created files (e.g., PowerPoint slides) are also acceptable as annotations or parts thereof. **In addition to annotating the PDF (to be sent to the email address), please create a hard copy text (e.g., Word) document containing, in order of their appearance in the PDF, all your annotations. This document needs to be printed out and handed in during class on Dec. 2nd.** Students are expected to work on this assignment individually. As it is very unlikely that any two students will choose the same paper to annotate, if this occurs by chance the assignments will be scrutinized extremely closely for evidence of collusion.

The purpose of the annotations is to convince the TA/instructor that you have a deep knowledge of both the findings of this paper and the context surrounding those findings, as if you were the reviewer of the manuscript when it was originally submitted. Any point you feel like making to demonstrate this deep knowledge is acceptable. Here are examples of relevant annotations: 1) does the title/abstract accurately reflect the finding?, 2) how experienced are the authors in the techniques used?, 3) is the introduction complete, fair and accurate?, 4) are the citations the appropriate ones?, 5) are the methods performed similarly to other related papers?, 6) are the data convincing?, 7) has the statistical analysis been performed and reported correctly?, 8) are the findings actually as novel as the authors are claiming?, 9) what impact did or will this paper have on the field?, and 10) was this paper published in the "appropriate" journal?

This is an open-ended assignment; there are no "right" ways to do it. Grades will be relative to everyone else in the class. We expect that students will come up with **approximately 5-7 annotations; we will pay attention only to the first 7**. The annotations themselves can be anything from a single sentence to a small paragraph. The more clever, probing, incisive and/or informed those annotations are, the better the grade you will receive.

Conformément à la Charte des droits de l'étudiant de l'Université McGill, chaque étudiant a le droit de soumettre en français ou en anglais tout travail écrit devant être noté (sauf dans le cas des cours dont l'un des objets est la maîtrise d'une langue).