A Grandiose Claim

This course is about giving you the tools to answer otherwise unanswerable questions.

It will not make the answers easy.

It will not make the answers absolute.

But it will introduce you to ways of taking on some of humanity’s most enduring mysteries.
• What are the causes of violence?
• How does human memory work? (and fail)
• What ingredients make for a happy life?
• Why are some people charitable and not others?
• What’s the best way to raise children?
• How do we see colours?
• Are sex differences inherent or the result of environmental differences (or both)?

The questions are evocative, but the methods to answer them can often seem abstract and dry
Try to keep your mind on some questions that interest you and think about how the various methodologies apply to them
A Little About Me

• Experimental psychologist for over 15 years

• I study visual perception, particularly face recognition, but also navigation, older driver performance, metacognition, etc. etc.

• At various times in my life, I have wanted to be: An astronaut, a writer, a journalist, a clinical psychologist, a social psychologist, a computer programmer, a teacher, etc. etc.

• Now I have the best job there is
A Little About You

• What degree are you in: Psych B.A., Psych. B.Sc., other social science, other?

• Why?

• What year are you in? What do you think of the program so far? What could make it better?

• What is your plan in life, if any? (I didn’t have one at your age, so no pressure)

• What have you heard about this course? Be honest, I can take it.
Contact Info

• Office: Montpetit 408C

• Office Hours: By appointment (Mon-Thurs late mornings are generally best)

• E-mail: ccollin@uottawa.ca (Preferred). **Check your uottawa e-mail often.**

• Phone: 562-5800 #4296

• Class web page: Download slides from here [http://tinyurl.com/25vjkna](http://tinyurl.com/25vjkna)
Textbooks

- “Research in Psychology: Methods and Design, 6th ed.” by Goodwin
- “APA Publication manual, 6th Ed.” (get the spiral-bound one if you can)
Saving Money on Textbooks

Second-hand copies of both texts should be available at these locations:

Agora Bookstore
Phone: 562-4672
agorabookstore.ca
145 Besserer St.

UOttawa Bookstore
Phone: 562-5353
tinyurl.com/uobookstore
Basement of Jock Turcot
University Centre
Evaluation

- Midterm: 20%
- Final Exam: 40%
- Research Proposal: 40%
Exams

- Mid-Term (20%)
  - In-class
  - 60 multiple-choice questions
  - Approx. Chps. 1 to 5

- Final (40%)
  - During final exam period
  - Mix of multiple choice, written, math, etc.
  - Note: Final is cumulative
Research Proposal

- A proposed research project of your own design, written with a partner.

- Must be original, not too similar to previously published studies.

- Describes a proposed research project in detail.
Schedule for Research Proposal

• Week 1-2: Choose partner & begin brainstorming

• Week 2-3: Have a detailed idea ready (come see me to discuss it)

• Week 6: Submit draft of research proposal

• At Final Exam: Submit final copy
Partners

- You are required to have a partner for the Research Proposal.
- Real-world research takes place in teams and requires division of labor, sharing of ideas, etc.
- Both partners’ names should appear on the draft and final copies in alphabetical order.
- Partner problems are rare, but can happen. Let me know as early as possible.
APA Style

- Proposal must be entirely in APA style.
- This is a scholarly writing style required by the American Psychological Association.
- Used in most scholarly Psychology publications.
- Read Appendix A of Goodwin (then read it again and again, trust me).
- Consult the APA Publication Manual, 6th ed.
General background (the easy stuff, will cover this quickly)
- Lecture 1. Scientific Thinking (Chp. 1)
- Lecture 2. Ethics in Research (Chp. 2)
- Lecture 3. Finding Ideas Old & New (Chp. 3)
  Have partner and brainstorm
- Lecture 4. How to measure things (Chp. 4)
  Interlude 1: Brief intro to a slew of methods

Large-N Experimental Designs (the hard stuff)
- Lecture 5. Basics of experimentation (Chp. 5)
- Lecture 6. Techniques for controlling variables (Chp. 6)
  Have detailed idea (come talk to me)
- Lecture 7. Multi-level experiments (Chp. 7)
  Midterm exam (approximately)
- Lecture 8. Multi-factor experiments (Chp. 8)
  Interlude II: APA Style (Appendix A)

Other forms of research (sorta in-between)
- Lecture 9. Correlational Research (Chp. 9)
- Lecture 10. Quasi-experimental designs (Chp. 10)
- Lecture 11. Small-N experimental designs (Chp. 11)
- Lecture 12: Catch-up & Review
  Hand in proposal draft
How Much Math Will There Be?

• Compared to Quantitative Methods, much less.
• Compared to an average psych course, more.
• Compared to a natural sciences course, none.
Statistics

- Basic knowledge of stats is needed to understand Research Methods.

- How many of you:
  - Have taken Quantitative methods?
  - Are currently taking QM?
  - Are waiting until the last moment to take QM?
Statistics

- For this course, you should be able to:
  - Do the math for basic descriptive stats (e.g., mean & standard deviation)
  - Determine which inferential test (e.g., t-test & ANOVA) applies to a given research design
  - If you don’t know this stuff, head over to...
I cannot say enough good things about this site!

Thousands of good instructional videos and exercises on (mostly) mathematical topics

If you need a refresher on high-school math, start here: khanacademy.org/#Pre-algebra

If you need to (re)learn statistics, try this: khanacademy.org/#Statistics
About Math

• Many psych students find math daunting

• Perhaps this is because math is something you *do*, rather than something you *know*.

• Practice, practice, practice!
  (khanacademy.org can help with that)

• Reading about math won’t do it

One of the quizzes will be a high-school math refresher
PSY2174 vs. Other Psych Classes

• More difficult than most, because it’s about doing rather than just knowing.

• Practice is essential, you can’t just read about this stuff.

• Not nearly as boring as people say! :-)

• More important than most classes.
Questions?

• Purple slides like this will appear throughout the lectures.

• These are good opportunities for you to ask questions, although you should feel free to ask questions at any time.

• I will also ask you questions. This gives you a chance to assess whether you’ve been absorbing the information.
Why Do I Have to Take Research Methods?

What’s so important about Research Methods?

Why this may be your most useful and important class
How is this course...

...important for you as students of the social sciences?

...important for your future job prospects?

...important for you as citizens in a society heavily influenced (ostensibly) by science?
Students of the Social Sciences Should...

...base their understanding of course content on empirical research findings

...be able to critically evaluate the evidence for the things being taught to them

...ultimately, be able to design and conduct their own research studies

This class will get you started on doing all of these things
Employers value...

...critical thinking ability
...data analysis skills
...the ability to search databases for relevant information
...general scientific literacy
...the ability to write clearly and concisely

This class will help you improve all of these skills
Research Skills

• Generate research ideas
• Search & retrieve literature on any given topic
• Read research and understand hypotheses, design, results, & conclusions
• Design sound & ethical research studies
• Write in proper APA style
• In general, engage in critical thinking
Clinical Psychology

- How many of you are thinking of a career in clinical psych?
- You are the people who will MOST need good research skills
- Good stats knowledge too
Clinical Research Tasks

1. Read & understand scientific literature
2. Run studies on etiology, course, & treatment of psych disorders
3. Do *program evaluation*
4. Develop psychometric tests
Clinical Research Tasks

1. Read and understand scientific literature

   - You are expected to base treatment on empirical support
   - To do so, you must understand the literature
     - If a study says “Therapy X is no good for condition Y”, can you trust it?
     - If a study says “Condition X tends to arise in people who have experienced Y”, is that true?
Clinical Research Tasks

2. Run studies on clinical psych questions
   • Clinical psychologists are the ones who mainly do studies and run experiments examining such questions as:
     • What experiences cause people to get condition Y?
     • How does condition Y progress? What changes can a patient expect over time?
     • Does treatment X alleviate condition Y?
   • Experimental psychologists study more basic things
Clinical Research Tasks

3. Do program evaluation

• As a C. Psych., you may be asked to plan out new programs and assess their effectiveness.

  • Does the hospital’s group therapy program for troubled youth actually help them out?

  • Does the school’s after-hours reading program improve reading skills?

• Very difficult questions, because they take place in real-world settings
Clinical Research Tasks

4. Developing psychometric tests

• Q: Does your patient even have condition X? How do you figure it out?

• A: Often some form of questionnaire or instrument designed to measure a psychometric characteristic (e.g., intelligence, psychopathy, depression)

• Clinical psychologists are the people who develop and test these instruments
Understanding Science

- We live in a society built on science and the technology it has brought forth.

- Wouldn’t it be good if we all understood the basics of how it all works?
Understanding Science

- We are constantly bombarded by information claiming to be scientific.
- Some of it is good science, some bad science, and some pseudo-science
- Wouldn’t it be good if we could all understand the difference?
Understanding Science

• We form opinions, vote, pass laws, etc. based on (we like to say) scientific evidence

• But do we understand what that even means?

• This course will help you better understand science, making you a better citizen
Understanding Science

- Politicians often like to cite scientific studies to back their position, but how valid are these studies?
- Media reports of scientific studies are often oversimplified, sensationalized, or simply wrong
- Knowing how science works helps one navigate the sea of media reports and biased scientific claims
IS IT A RIGHT TO REMAIN IGNORANT?

I DON'T KNOW, BUT I REFUSE TO FIND OUT!
Getting More Research Skills Training

- Quantitative Methods I & II (PSY2106 / PSY2116)
- Psychometric Methods (PSY3307)
- Research in Dev Psych (PSY3140)
- Lab in Physiological Psych (PSY4302)
- Computing in Psychology (PSY 3172)
- Qualitative Methods in Criminology (CRM 4304)
Questions?

• Why is this class important to you as students? As citizens? As future clinicians?

• What are some research tasks clinicians engage in?

• What is a good website to help get your math skills refreshed?
THE END