

**Inquiry in Psychology – Developmental Critical Periods**  
**Psychology 4J03**  
**Fall Term 2007**

Instructor: Mayu Nishimura

Office Hours: Monday & Thursday 1:30pm – 2:30pm, Room 138

Phone: 905-525-9140 x24761

Email: [nishimm@mcmaster.ca](mailto:nishimm@mcmaster.ca)

Teaching Assistant: Katie Corrigan

Office Hours: By appointment only

Email: [corrigan@mcmaster.ca](mailto:corrigan@mcmaster.ca)

Classes (GS 101):

Mondays, 12:30pm – 1:30pm

Thursdays, 11:30am – 1:30pm

Course Objectives:

The purpose of this course is to improve students' skills at inquiry in the context of experimental psychology. The philosophy and goals are the same for any student or researcher in science. Inquiry is a *process* of critical thinking rather than a discreet entity. It entails the development of skills in the context of a *body of knowledge*, as well as *personal intellectual growth* (evaluation of ourselves and our peers). These skills include:

- Problem identification: ability to ask good questions
- Problem solving
  - Ability to determine what information is necessary in order to answer those questions
  - Ability to identify the appropriate resources to gather information
  - Ability to use resources effectively
- Communication: Ability to report on and discuss what has been learned

Each student will be evaluated on all of the skills described below:

1. Posing a good question, and refining it.
2. Identifying sources of information
  - a. Library
  - b. On-line resources
  - c. Experts in the field
3. Evaluating information for relevance and validity:
  - a. On a website
  - b. In a journal
  - c. In a book
  - d. In the popular media
  - e. From emails
  - f. From experts
  - g. In presentations

4. Integrating information
  - a. Using information to address the question of interest
  - b. Recognizing limitations in the “answer”
  - c. Identify remaining questions
5. Presenting the answer persuasively and appropriately
  - a. Orally
  - b. In writing
6. Working with others
  - a. Identifying individual strengths
  - b. Dividing responsibility
  - c. Following through
  - d. Providing feedback
  - e. Dealing with problems in group functioning
7. Time management
8. Evaluating your strengths & weaknesses in each area

#### Projects:

Group Project: you will have a chance to work in collaboration with 2-3 peers on any topic of interest triggered by any of the readings in the course. Each project will involve defining the question, researching the answer, and presenting your findings to the class orally (including being prepared to answer questions from other students and the instructor/TA, and leading a discussion). You will also be responsible for critically evaluating your own presentation, the contribution to the presentation by you and your group members, and the presentations of other groups (in-class evaluations and two formal critiques).

Group Work: Each group is free to organize itself as it thinks best (e.g. dividing responsibility, working together, working in sub-groups, etc.), but must file a weekly progress report on how it is functioning and on the knowledge it has gained. One progress report per group is due every Monday. Katie and I will comment on the progress reports and are available to be consulted as often as each group (or group member) likes on any topic. Although you may meet at other times, some class times will be set aside for groups to work on their projects.

Individual Paper: You are responsible for writing a research paper on a sub-topic of the group project. The paper must include sufficient original thought that differs from the group presentation (i.e. don't summarize your group presentation). The final paper is due **December 5, 2007**, and is limited to 5 pages, plus references. The paper should describe the research question and what the literature in experimental psychology indicates is a probable answer. It should describe the experimental evidence succinctly, with references. It should also point out limitations in the evidence and remaining questions.

**Rough Schedule** (any of these dates may change, but the due date for the final individual paper will not be moved earlier).

**September 6:** Introduction of course and class members, benchmarking 1

**September 10 – October 11:** Readings on critical periods

We will practice all skills involved in inquiry by discussing the evidence for and against the existence of critical periods in various aspects of behaviour. You must read the required readings and hand in a written critique before class, and participate in class discussions and/or provide thought papers following class. For each review paper, we will focus on establishing the research question, evaluating the information that helps to answer the question, and identifying the limitations and remaining questions.

Critique: identify the research question, and evaluate, in your own opinion, whether the question was adequately addressed and why. Maximum one page. Hand in a hardcopy or send to WebCT before every class.

September 10 & 13: low-level & high-level vision

September 17 & 20: visual cortex

September 24 & 27: rehabilitation (amblyopia & cochlear implants)

October 1 & 4: speech & music perception

October 11: computational modeling

**October 15 – November 8:** Major project

*October 15:* Formation of groups.

*October 15 – November 8:* Working sessions for groups (no classes).

**October 22, 29, November 5:** Progress reports due.

**November 12 – November 26:** Group presentations (50 minutes each)

Groups must present their material succinctly in 20 minutes. Then they will lead a discussion for 20 minutes. The final 10 minutes will be used to evaluate the groups. Additionally, you will be required to write a critique of two presentations (other than your own). You must also hand in a self-evaluation of the group on the day of your presentation.

**November 29 & December 3:** Benchmarking 2

**WEDNESDAY, DECEMBER 5, 2007: FINAL PAPER DUE (10% will be deducted for each day that the paper is late).**

## EVALUATION

The evaluation will come from a variety of sources, including self- and peer evaluations, benchmarking exercises, presentations, participations, critiques, and the individual paper. The rough weighting of the final grade will be as follows:

Individual Paper: 30%

Group Inquiry: 30%

- includes presentation material as well as ability to lead discussion

- contribution to group effort
- Participation: 20%
- class discussions
  - attendance
  - optional thought papers after class
- Critiques & Benchmarking: 20%
- includes improvement over course

### **Final Grades:**

**A:** has attained a high level of competency in all of the stated skill areas. This competency would allow the student to complete excellent inquiry projects in any area of psychology. This would be recognizable by any facilitator and the peer group.

**B:** has attained a high level of competency in many (but not all) of the stated skill areas. This competency allows the completion of good inquiry projects. The student is aware of any remaining area of weakness, has shown improvement in that area, has developed strategies for minimizing its adverse effects, and has a plan of action for eliminating the weakness.

**C:** has attained a moderate level of competency in some of the stated skill areas or has attained a low level of competency in all of the skill areas. The student will recognize the deficiencies or concerns and will have discussed a plan of action to deal with the concerns.

All written assignments will be handed in through WebCT. More details on how to use WebCT will be given in class.