The course will emphasize research at the interface of visual perception and cognition, focusing on empirical research, computational modeling and theory construction about human visual cognition. The course will address selected aspect of visual cognition such as object, face, and scene recognition; visual attention; visual memory; visual word recognition and reading; computer vision; eye movement control and active vision; event structure and segmentation; and visual imagery. The details of schedule and coverage won’t be set in stone until the enrollment is fixed; exact topics to be covered will be negotiated with class members, with every effort being made to accommodate members’ interests.

The seminar will satisfy the university oral communication requirement. Toward that end, the course will expect active oral participation in every session. Importantly, each student will prepare and deliver a formal presentation about a topic chosen in consultation with the instructor.

I will kick off each student-led sessions with ~20 minutes of background and context for the topic we’ll be discussing that session.

I will work with each of you to suggest papers that would be suitable fuel for your presentation, and we will together choose one or two key papers that everyone will read before seminar and come prepared to discuss.

I will lead the first few sessions, giving a once-over introductory survey of vision and visual cognition, focusing on papers by Patrick Cavanagh (Dartmouth). Then we’ll spend part of one session on Chaz Firestone and Brian Scholl’s provocative paper, “Cognition does not affect perception: Evaluating the evidence for “top-down” effects” 2016.

Below are some topics I think might be suitable for the seminar. There may well be other good ones that I have not thought of. I’d like each of you to select the topics you would prefer to work over for seminar. If you can send me a list of three topics you’d like to tackle, putting them in order from most preferred to least preferred (1-3), I will sort out any conflicts and assign each of you a topic. Then, we can work out the schedule for seminar presentations.
Final project. In addition to your class presentation, you will also be evaluated on a final project, which will take the form of a 15 page paper representing your take on the topic you presented in class. Your paper should not be limited to your presentation in class, but go beyond it, for example, identifying outstanding unresolved issues or evaluating critically the state of knowledge in the area. I will be available to guide the development of final papers. There will be no final exam.

Some possible topics for seminarians

Computer vision and autonomous vehicles, including models
Multisensory interaction, including models
Art and vision
Movie and event structure, including models
Reading, including models
Visual attention, including models
Visual memory, including models
Perceptual learning, including models
Visual search, including models
Ensemble stats, including models
Face perception, including models
Expectation and predictive coding, including models

Final papers are due no later than December 15

University mandated notes

1. Accommodations for disability. In every course at Brandeis University, any student with a diagnosed disability should alert the course’s instructor as soon possible to special needs that arise from that disability, and provide documentation of the disability. NPsy 174 is not an exception.

2. Academic honesty. Every member of our academic community is expected to maintain the highest standards of academic honesty. Anyone who does not abide by the University’s expectations faces serious penalties. For students, possible penalties include failure on an assignment, failure in the course, suspension from the University, or other sanctions. This is a serious matter. You can find the University’s policy on academic integrity in Section 3 of the Rights and Responsibilities Handbook.