

# UNIVERSITY FACULTY SENATE FORMS

## Academic Program Approval

This form is a routing document for the approval of new and revised academic programs. Proposing department should complete this form. For more information, call the Faculty Senate Office at 831-2921.

Submitted by: Fred Adams & Anna Papafragou phone number 6706

Department: Linguistics & Cognitive Science / Psychology email address fa@udel.edu /

Date: 11/12/2010

Action: Add Graduate Cognitive Science Certificate Program  
(Example: add major/minor/concentration, delete major/minor/concentration, revise major/minor/concentration, academic unit name change, request for permanent status, policy change, etc.)

Effective term 11F  
(use format 04F, 05W)

Current degree B.S., M.A., Ph.D.  
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed change leads to the degree of: Graduate Certificate  
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed name: Graduate Certificate in Cognitive Science  
Proposed new name for revised or new major / minor / concentration / academic unit (if applicable)

### Revising or Deleting:

Undergraduate major /  
Concentration: N/A  
(Example: Applied Music – Instrumental degree BMAS)

Undergraduate  
minor: N/A  
(Example: African Studies, Business Administration, English, Leadership, etc.)

Graduate Program Policy statement change: Attached  
(Must attach your Graduate Program Policy Statement)

Graduate Program of Study: Graduate Certificate in Cognitive Science  
(Example: Animal Science: MS Animal Science: PHD Economics: MA Economics: PHD)

Graduate minor / concentration: \_\_\_\_\_

**Note: all graduate studies proposals must include an electronic copy of the Graduate Program Policy Document, highlighting the changes made to the original policy document.**

**List new courses required for the new or revised curriculum. How do they support the overall program objectives of the major/minor/concentrations)?**

(Be aware that approval of the curriculum is dependent upon these courses successfully passing through the Course Challenge list. If there are no new courses enter "None")

No new courses are required. However two courses in the proposed list of courses a student can use for the certificate are currently pending in the approval cycle.

**Explain, when appropriate, how this new/revised curriculum supports the 10 goals of undergraduate education: <http://www.ugs.udel.edu/gened/>**

**Identify other units affected by the proposed changes:**

(Attach permission from the affected units. If no other unit is affected, enter "None")

Co-proposed by the department of psychology. We have consulted Anthropology, Biological Sciences, Mathematical Sciences, Computer and Information Sciences, Education, Linguistics & Cognitive Science, Philosophy, Physical Therapy, and Psychology. All have responded without objection and many have contributed courses to the approved list for the certificate program.

**Describe the rationale for the proposed program change(s):**

(Explain your reasons for creating, revising, or deleting the curriculum or program.)

See Attached Statement of Purpose

**Program Requirements:**

(Show the new or revised curriculum as it should appear in the Course Catalog. If this is a revision, be sure to indicate the changes being made to the current curriculum and include a side-by-side comparison of the credit distribution before and after the proposed change.)

See Attached program description of requirements.

**ROUTING AND AUTHORIZATION:** (Please do not remove supporting documentation.)

Department Chairperson Fred Adams Paul C. Quinn Date 11/15/2010  
Dean of College \_\_\_\_\_ Date 11/15/2010  
Chairperson, College Curriculum Committee \_\_\_\_\_ Date \_\_\_\_\_  
Chairperson, Senate Com. on UG or GR Studies \_\_\_\_\_ Date \_\_\_\_\_  
Chairperson, Senate Coordinating Com. \_\_\_\_\_ Date \_\_\_\_\_  
Secretary, Faculty Senate \_\_\_\_\_ Date \_\_\_\_\_  
Date of Senate Resolution \_\_\_\_\_ Date to be Effective \_\_\_\_\_  
Registrar \_\_\_\_\_ Program Code \_\_\_\_\_ Date \_\_\_\_\_  
Vice Provost for Academic Affairs & International Programs \_\_\_\_\_ Date \_\_\_\_\_  
Provost \_\_\_\_\_ Date \_\_\_\_\_  
Board of Trustee Notification \_\_\_\_\_ Date \_\_\_\_\_

## Proposal for a Graduate Certificate Program in Cognitive Science at the University of Delaware

November 09, 2010

Proposing Departments: Linguistics & Cognitive Science and Psychology

Proposing members: Fred Adams (Ling & Cog Sci), Anna Papafragou (Psych)

Participating departments: Anthropology\*, Mathematical Sciences, Computer and Information Sciences, Education, Linguistics & Cognitive Science, Philosophy\*, Physical Therapy, and Psychology. (\*Contribute courses, but currently have no graduate programs)

### Statement of Purpose

University of Delaware departments with graduate students interested in one or more aspects of cognitive science include: computer science, health & exercise science, mathematics, linguistics & cognitive science, psychology, school of education, and possibly some departments in engineering. Students attaining graduate degrees and applying for external funding in these departments would benefit academically because this would open opportunities that are currently available but not easily achieved without the lack of an administrative structure. A formal structure like this is good for students and faculty alike and could lead to students better attaining the breath that will possibly broaden their research approach and certainly enhance their teaching breadth (good for jobs) – on the market it will make them better in their interviews with a broader set of researchers, and thus more competitive in that sense.

The field of cognitive science cuts across all of the fields of the participating departments above. In addition, cognitive science can include interest from students in wildlife ecology and animal and food science (where many students are interested in animal cognition). Many of the most respected universities in the field of cognitive science have graduate certificate programs in cognitive science, including: the University of Buffalo, University of Colorado, University of Central Florida, Florida State University, Georgia Tech, Johns Hopkins, Indiana University, University of Maryland, University of Massachusetts, University of Memphis, UNC-Charlotte, Northwestern, Virginia Tech, and Rutgers. Stanford has a “symbolic systems” program which is their version of this type of program.

The study of cognitive science is inherently interdisciplinary. Novel research happening at the boundaries of the cognitive sciences is generated by certificate programs like these. While students working on Ph.D.s in their disciplines can in principle do cross-departmental research, without an added incentive, there is tremendous pressure to stay confined within one’s silo of expertise. A certificate program like this will provide the catalyst to inspire students to engage in research beyond their home program and learn new skills in the adjoining programs. This program would also enhance cross unit collaboration and interdisciplinary focus across faculty as well. These interdisciplinary ventures tend to inspire new ways of thinking for students and faculty and new avenues of experimental investigation, often unforeseen and often rewarding to both the home discipline and adjoining ones. The cognitive science certificate will promote such interdisciplinary investigation.

## Proposed program structure and requirements

Matriculated graduate students in doctoral or masters programs in the departments listed above may apply for admission to the cognitive science certificate program. Applications should be submitted to the steering committee of the certificate program. This committee will be or be a sub-set of the existing cognitive science advisory committee.

\*Requirements are completion of 15 credits of graduate level courses selected from the list below.

\* Students will take 9-12 hrs outside home department.

\* Student must, in consultation with his/her major advisor, submit a plan of study to the cognitive science certificate steering committee as early as possible. The student must have completed no more than six credits of course work towards the certificate when the plan of study is presented. The plan proposed must be accompanied by a cohesive rationale for the specific set of courses included in the plan. The plan must designate a member of the faculty from one of the relevant departments other than the student's home department as certificate advisor, who must approve the plan of study. (Some grandfathering of current students may be possible as the new program takes effect.)

\* The cognitive science steering committee must review each student's accomplishments at or before the time the student receives the terminal degree in the home department, and if the student has fulfilled the requirements, approve the awarding of the certificate.

\*The courses below are those that qualify for the program. Additional courses may be added to the list or removed from the list during each academic year, with oversight of the steering committee.

## Administrative Structure

The cognitive science certificate steering committee will be comprised of one faculty member of each department involved in the program (listed above). Departments will select faculty for two-year terms of service. There can be consecutive terms of service. The steering committee will elect a committee chair, who will call meetings and co-ordinate activities. Departments not currently participating may petition the steering committee for inclusion and for inclusion of qualifying courses.

This program will require no new resources (though we would accept contributions by deans or departments for funds for activities, as appropriate). The participating departments will advertise the program on their web pages. Certificates will be awarded during departmental commencement activities each spring semester.

Sample format of plan of study:

Student Name:

Major Department: \_\_\_\_\_

Application date: \_\_\_\_\_

Expected date of receipt of terminal degree (masters or doctoral) \_\_\_\_\_

Proposed courses from list of approved courses:

| Dept | Number | Title | If already taken | Semester | Grade | Date (to be) taken |
|------|--------|-------|------------------|----------|-------|--------------------|
| 1)   | _____  | _____ | _____            | _____    | _____ | _____              |
| 2)   | _____  | _____ | _____            | _____    | _____ | _____              |
| 3)   | _____  | _____ | _____            | _____    | _____ | _____              |
| 4)   | _____  | _____ | _____            | _____    | _____ | _____              |
| 5)   | _____  | _____ | _____            | _____    | _____ | _____              |

Rationale: Provide a rationale for the proposed courses, describing how they constitute a coherent approach to cognitive science. Provide course descriptions and justifications.

Major Program Advisor: \_\_\_\_\_ Department: \_\_\_\_\_

Certificate Advisor: \_\_\_\_\_ Department: \_\_\_\_\_

Signature of Certificate Advisor: \_\_\_\_\_ date: \_\_\_\_\_

Signature of applicant: \_\_\_\_\_ date: \_\_\_\_\_

### List of Qualifying Courses for the Graduate Certificate in Cognitive Science

#### **Anthropology**

Anth 666 Independent Study

#### **Computer and Information Sciences**

CISC 618 Artificial intelligence

CISC601 Elements of the Theory of Computation

CISC681 Artificial Intelligence

CISC886 Multi Agent Systems

## **Education**

- EDUC 821: Cognition and Instruction
- EDUC 823: Learning and Development
- EDUC 820: Contexts for Learning
  
- EDUC 848: Language Acquisition
- EDUC 802: Seminar in Reading
- EDUC 807: Writing Processes in Educational Settings
- EDUC 816: Literacy Problems
- EDUC 833: Research and Theory of Mathematics Learning
- EDUC 834: Research and Theory of Mathematics Teaching
- EDUC 835: Research and Theory of Mathematics Curriculum
- EDUC 817 Individual Intelligence Testing
- EDUC 870 Child Neuropsychology

## **Linguistics & Cognitive Science**

**CGSC 604** Animal minds

**CGSC610** Embodied cognition

**CGSC 611** Naturalized semantics (Pending)

**CGSC 850** Topics in experimental methods

**CGSC 618** Meaning and language use

**CGSC620** Research methods in cognitive science

**CGSC 650** Recent topics in the philosophy of mind

**CGSC 651** Topics in cognitive science

**CGSC 670** Elements of cognitive science

**CGSC 671** Discovering human language: Introduction to field linguistics

**CGSC 685** Seminar in cognitive science

**CGSC 696** Psycholinguistics

CGSC 850 Topics in experimental methods

CGSC 890 Studies in Linguistics

LING 651 Logical Structures in Language

LING 604 Structure of language

LING 691 Semantics

**LING 651 Logical Structures in Language**

### **Physical Therapy**

PHYT 623 Clinical Neuroscience

### **Philosophy**

PHL 866 Special Problems

### **Psychology**

Neuroplasticity PSYC467/667; now goes under NSCI631 Current topics  
in Neuroscience

NSCI 631 Learning, Memory & Brain

NSCI 631 Developmental Behavioral Neuroscience

NSCI 631 Seminar on spatial cognition

NSCI 631 Stress and the Brain

Integrative Neuroscience I (NSCI629)

PSYC860 Psychological Statistics

PSYC809 Research Design

Psyc 806 (Social Cognition)

PSYC 642 Mental representation and memory

PSYC 667 Seminar on Language and Cognition

PSYC667-010 Seminar: Visual Cognition

PSYC 667 Early Perceptual-Cognitive Development

PSYC 867 Cognition, Emotion, & Individual Differences

PSYC 633 Cognitive Neuroscience (proposed)

**Bylaws**  
**Program in Cognitive Science**

(approved by faculty members of program: Oct. 20, 2004)

Cognitive science studies the human mind viewed as a computational process. It lies at the confluence of computer science, educational and cognitive development, linguistics, neuroscience, neurobiology, philosophy, psychology, and certain areas of mathematics. Cognitive science has arguably been the most important development in the study of human thinking in the past twenty years; its influence can be seen across a wide variety of disciplines, from logic to communication disorders. The purpose of the program in Cognitive Science is to encourage collaborative faculty and student efforts in Cognitive Science at the University of Delaware. The program provides an ongoing forum for collaboration among faculty and students from different disciplines and provides support for research and instruction in cognitive science. In addition, the Program provides advice and encouragement for the academic programs in Cognitive Science which are administered by the Department of Linguistics.

**1. Membership**

Membership in the program as of June 1, 2004 is specified in Appendix I. Membership is open to all faculty actively engaged in research and teaching in an area of cognitive science. Membership is by application and is subject to the approval of Advisory Committee of the Cognitive Science Program.

**2. Meetings**

There will be a meeting of the faculty of the Program, called by the Director, at least once each academic year. The agenda for the meeting will be distributed at least three days before the meeting. Additional meetings can be called by the membership in the Program upon submission of a written request of five members.

**3. Director**

**a. Appointment of the Director**

The Director will be nominated by the Advisory Committee and appointed by (and at the pleasure of) the Dean of the College of Arts and Sciences. The Director will be responsible for the administration of the Cognitive Science Program. The Director will report to the Dean of the College of Arts and Sciences and will seek the counsel and recommendations of the Cognitive Science Advisory Committee.

**b. Term of Office**

The Director will serve for a three year term. Upon nomination by the Advisory Committee, the Director may be reappointed by the Dean of the College of Arts and Sciences for a second term. The Director may not serve for more than two consecutive terms.

**c. Duties of the Director**

The duties of the Director are to provide programmatic leadership and administrative oversight for the Program. These duties include but are not limited



to the following:

- i. Formulate annual budget request for the program for approval by the Advisory Committee.
- ii. Presentation and discussion of the budget request at the annual budget meeting with Dean of Arts and Sciences.
- iii. Consultation with the Advisory Committee and the Chairs of academic departments involved in Cognitive Science on the planning and coordination of the annual program activities.
- iv. Coordinate the academic program(s) in Cognitive Science with the Chair of Linguistics.
- v. Appoint the representatives of Cognitive Science on Linguistics Department committees overseeing the academic program(s) in Cognitive Science.
- vi. Call at least one meeting per academic year of the entire membership to discuss future direction of the program and to elect officers (as necessary).

#### **4. Advisory Committee**

The Advisory Committee will consist of the Director plus six members of the Program elected by the membership of the Program during the Spring Semester. The term of the members of the Advisory Committee will begin on the first day of the fall Semester. Elected members will serve for two year terms except in the case of the 2005 election. For the sake of continuity, staggered terms will be introduced in the 2005 election. Thus, for that election only, three members will be elected for a one year term and three for two year terms. There are no restrictions on the number of terms of service of members of the Advisory Committee.

The Advisory Committee will assist the Director in the administration of the Program, and will act on behalf of the faculty of the Program in matters of policy. Policy decisions of the Advisory Committee will be reported to the faculty of the Program within one week of adoption. At the request of five members of the faculty of the Program, such decisions will be discussed and voted on at a meeting of the Program faculty or by an e-mail ballot (at the adoption of the Director). Decisions will be made by a simple majority of the members voting.

#### **5. Academic Programs in Cognitive Science**

The academic program(s) in Cognitive Science are administered by the Department of Linguistics. Additions to and changes in these programs will require the approval of both the Department of Linguistics and the Director, and, for questions of policy, the Advisory Committee of the Program. Currently approved academic programs in Cognitive Science are listed in Appendix II.

**Fred Adams**

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**From:** "Fred Adams" <fa@udel.edu>  
**To:** "Martin, Mary J." <marym@UDel.Edu>  
**Sent:** Monday, November 15, 2010 9:37 AM  
**Subject:** Re: certificate

Hi Mary,

Thank you so much.

See below.

Yours,  
fa

----- Original Message -----

**From:** "Martin, Mary J." <marym@UDel.Edu>  
**To:** "Adams, Frederick R" <fa@UDel.Edu>  
**Sent:** Sunday, November 14, 2010 2:04 PM  
**Subject:** RE: certificate

Fred, the procedures through A&S are as Cindi Shenkle indicated. The Graduate Studies Senate Committee will be the primary Senate Committee that will review the proposal since it is a graduate certificate program.

As part of this process and on behalf of the Graduate Senate Committee, I review the proposals prior to placing the item on the agenda so as to clarify any standards issues.

I have read through your documents and have the following comments:

1) From the list of universities that you gave, can you recommend one that would be best for us to take a look at as a comparison to your proposal?

Yes, the UMass proposal is the one I used for guidance. Do you want me to mention this as "the one" for comparison IN THE PROPOSAL? Or just to you here?

2) Certificate programs are reported on a student's transcript. I think that once you have agreed to permit the student to participate in the program, we would place it on the transcript as in progress. However, should the student not complete the certificate, we normally remove the notation that the student was ever in the certificate program. Do you see any problem with this approach?

No. That's just right, I think.

3) A change of classification form can be used to notify my office that a student has been approved for the certificate program. Your program of study sheet would need to be submitted to my office when it is to record

that the certificate has been completed.

Okay. Sounds fine.

4) I am unclear as to whether the 15 credits in the certificate program will add total credit requirements for the students major program or not? Would the courses be electives toward the major degree or in addition? This relates to the comment that up to 12 hrs may be taken outside the student's home department.

This was confusing. So we are changing it to read "Students will take 9 hrs outside home department."

5) Will the programs who are participating update their program policy statements to include the option of the Certificate Program in their program?

They are welcome to do so.

6) Can the students be awarded the certificate if they don't finish the major degree?

I don't see why not, as long as they complete the 15 credits while in the degree program.

Do I need to say anything about this in my proposal document?

7) Are there any minimum grade requirements for the courses used in the certificate program?

No. Just the grade minimums to stay in their home graduate programs.

8) I assume that the certificate will be awarded concurrently with the degree of the major program and not prior to the completion of either the master's or PHD degree.

If that makes record-keeping easier, that's fine with me.

If you would like to meet to discuss any of these points, please let me know.

Do I need to include our graduate policy document? The checklist asks for this. And if so, do I need to include those of any other departments?

Mary Martin  
Assistant Provost for Graduate and Professional Education  
University of Delaware  
234 Hullihen Hall

**Fred Adams**

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**From:** "Gabriella Hermon" <gaby@UDel.Edu>  
**To:** "Fred Adams" <fa@UDel.Edu>  
**Cc:** "Jane Creswell" <creswell@UDel.Edu>; <gaby@UDel.Edu>  
**Sent:** Monday, November 15, 2010 12:40 PM  
**Subject:** Re: graduate cognitive science certificate program approval

Dear Fred,

The graduate committee has evaluated your proposal for a certificate program in Cognitive Science and has endorsed this proposal. We believe such a program will be a great opportunity for graduate students in many of the disciplines associated with cognitive science.

We are looking forward to working with the Cognitive Science Advisory committee on overseeing the students who opt to participate in this program.

Gaby

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\*\*\*\*\*  
Gabriella Hermon  
Graduate Director  
Department of Linguistics and Cognitive Science  
42 E. Delaware Av.  
University of Delaware  
Newark, DE 19716

For applications to our graduate program please consult:

<http://www.ling.udel.edu/>

<http://www.udel.edu/gradoffice/apply/>

tel: (302) 831-1642  
office fax: (302) 831-6896

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