SIMON FRASER UNIVERSITY

MEMORANDUM

To: Senate

From: Senate Committee on
Undergraduate Studies

Subject: Cognitive Science Program
Revisions

Date: October 21, 1986

Action undertaken by the Senate Committee on Undergraduate Studies at its meeting of October 21, 1986 gives rise to the following motions:

MOTION 1:

"That Senate approve and recommend approval to the Board of Governors, as set forth in S.86- 63, the proposed

New courses - COGS 200-3   Basic Cognitive Science
COGS 400-3   Advanced Cognitive Science
COGS 490-5   Honors Project I
COGS 491-5   Honors Project II"

MOTION 2:

"That Senate approve and recommend approval to the Board of Governors, as set forth in S.86 -63 the proposed

Change in Cognitive Science program requirements."

SIMON FRASER UNIVERSITY

MEMORANDUM

To W.R. Heath, Secretary
Senate Committee on
Undergraduate Studies

From Sheila Roberts, Secretary

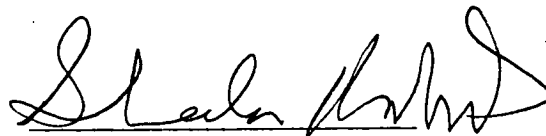Faculty of Arts Curriculum Committee

Subject Curriculum Revisions

Date October 16, 1986

The Faculty of Arts Curriculum Committee at its meeting of October 16, 1986 recommended revisions the the Cognitive Science Programme.

Would you please place this item on the agenda of the next meeting of SCUS.

Thank you.

/sjc
Encl.

S. Roberts

MEMORANDUM

To   Evan Alderson, Chair,   From   Roger Blackman. A Coordinator
     FACC   Cognitive Science Program

Subject   Revisions to the Cognitive   Date   October 7, 1986
          Science Program

. . . .

Please find attached a second version of the proposed revision of the Cognitive Science Program that has been approved by the Program's Steering Committee.

PROPOSAL FOR CHANGES TO THE COGNITIVE SCIENCE

UNDERGRADUATE PROGRAMME.

**Submitted by the Cognitive Science
Undergraduate Programmme Steering
Committee.**

CURRICULUM CHANGE: COGNITIVE SCIENCE

Motivation for changes:

(1)   As can be seen from the history of the PLP PROGRAMME - recently retitled and reorganised as COGNITIVE SCIENCE - the number of required courses, both LD and UD, is too large to attract any but the most undaunted students. As it stands, the programme certainly makes choice of entry an early-decision matter. In fact, the decision is required much too early. Thus, it is, in practice, not an attractive notion for students who have completed their first year, and certainly not for those who have completed their first 60 hours, unless they happen to have chosen to do courses that, by accident, fit very extensively into the CS programme. We wish to make changes that emphasise the *ease of entry* rather than, as we have done in the past, *the ease of opting out*.

(2)   The selection of courses at the Lower and the Upper Levels inherently involves a diffuseness which increases proportionally with the number of courses. This does not make for academic/intellectual cohesiveness which is a *sine qua non* if we wish to establish CS as a discipline in its own right. The present format is, in the final analysis, no more than a selection of course numbers/names rather than of guaranteed content and coherent content relationships. We have no control whatsoever over this feature, given the sources of our courses, and there is no real reason why we should. An amout of variation in the content of courses across offerings reflects the collective philosophy of a department as represented by its individual faculty members, a situation that is a healthy and necessary one within the Departmental structure of the Faculty/University. Thus, the best situation for CS - in order to handle this variation in the most advantageous manner - is to establish a minimum set of integrative CS courses. The further advantages for involved faculty from such courses are clear.

In this proposal, there will be a curricularly and programmatically logical "trimming down" of the number of courses required for the undergraduate CS degrees, and a proposal for four new CS(COGS) courses - one 200-level(to be taken at or near the completion of the LD   and

"intermediate" courses), one 400-level(to be taken at or near the completion of the UD requirements), and two Honours Project courses:

NEW COURSE PROPOSALS

COGS 200   Basic Cognitive Science.

Course Description:

The course is designed to provide students who have completed at least the BASIC requirements of the Cognitive Sciences Major Programme with an overview of the contents and general implications of the lower-level Cog. Sci. programme requirements that are drawn from the Psychology, Linguistics, Compt. Science and Philosophy curricula. Its emphasis will be on the integration of the various components, on comparing and contrasting the approaches represented in and by each of the disciplines.

COGS 400   Advanced Cognitive Science.

Course Description:

This course continues at a more advanced level the theme and purpose of COGS 200.

COGS 490-5   Honours Project I.
COGS 491-5   Honours Project II.

Specific Assumptions, Justification, etc:

I.   All CS students must be familiar with the "fundamentals" of each subject adopted into the programme, **viz.**, at the moment, Psychology, Linguistics, Philosophy and Comp. Science.

II.   The CS programme, in order to be an attractive alternative to students while, at the same time, being a solid degree programme, must not deviate wildly from other degree programmes in its requirements. It must not be perceived to

be "too heavy" or "too demanding" or "too locked-in". There is neither intellectual nor practical-curricular merit in the establishment of a programme that is "heavy" or "challenging" for its own sake. It must, in the final analysis, be able to prove itself curricularly, i.e. quantitatively, something which **PLP** failed to do, very largely for the reasons discussed in this section. We do not feel that the **CS** programme in its present format will prove any more successful. The proposal here tries to make entry into the programme a "natural", even "comfortable" thing to do.

III.   The **CS** programme must have an integration component to provide the students enrolled with a formal means of linking the courses together in a meaningful manner and of getting to know their fellow **CS** students. This is also important for the faculty involved, for intellectual as well as for curricular reasons. The **PLP** programme failed in its commitment to do this. **CS** _must_ fulfil this need and can do so only within the formal framework of a set of courses. Furthermore, these courses will not only serve an integrative-intellectual function but will figure as a measure and a control of the success of the programme in that they will be subject to the criteria of viability of offering administered by the Dean of Arts' Office.

IV.   We have chosen to _deemphasise_ the specific-subject **Minor/Major** and **Concentration** possibilities of the **CS** programme. A primary purpose of reorganising the undergraduate programme is to _emphasise_ the independence and the valid programme/discipline status of **CS**. This is consistent with the principle of deemphasising the ease of exit from the programme. Either we are or we are not a programme. If we are, we must make this unequivocably clear in our calendar, otherwise we come over as nothing more than a _pot-pourri_ of courses.

PROPOSED CALENDAR ENTRY:

MAJOR IN COGNITIVE SCIENCES

LOWER DIVISION REQUIREMENTS:

(i) Basic Courses (25 hours)

Psychology:

Psych.   101-3 Introductory Psychology.
Psych.   180-3 Brain and Behavior.

Linguistics:

Ling.   100-3 Communication and Language.
Ling.   130-3 Practical Phonetics.

Philosophy:

Phil.   100-3 Knowledge and Reality.
OR
Phil.   110-3 Introduction to Philosophical Concepts and Reasoning.

Phil.   150- 3 History of Philosophy I.
OR
Phil.   151-3 History of Philosophy II.

Computing Science:

Cmpt.   101- Introduction to a High Level Programming Language A.
PLUS
Cmpt.   104-4 Introduction to a High Level Programming Language II.

Cmpt.   105-3 Fundamental Concepts of Computing.

(ii.) Intermediate Courses (22-25 hours).

A student must choose COGS 200-3 and the courses listed below for at least three of the four disciplines

Psychology:

| Psych. | 201-3 | Research Methods in Psychology. |
| Psych. | 210-3 | Data Analysis in Psychology. |

Linguistics:

Ling.	221-3	Introduction to Phonology.
Ling.	222-3	Introduction to Descriptive Techniques II (Syntax).
Ling.	240-3	Theory and Analysis in Linguistics.

Philosophy:

| Phil. | 210-3 | Elementary Formal Logic I. |
| Phil. | 244-3 | Introduction to the Philosophy of Natural and Social Science. |

Computing Science:

| Cmpt. | 201-4 | Data and Program Organization. |
| Cmpt. | 205-3 | Introduction to Formal Topics in Computing Science. |

Cognitive Science:

| CogS. | 200-3 | Basic Cognitive Science |

UPPER DIVISION REQUIREMENTS (30-31 hours):

A student must choose **COGS** 400-3 and fulfill the requirements listed below for the three disciplines selected at the Intermediate level.

Psychology:

Any **THREE(3)** of:

| Psych. | 302-3 | Learning |

Psych.   320-3 Cognitive Processes.
Psych.   366-3 Language Development.
Psych.   367-3 Experimental Psycholinguistics.

Linguistics:

Any THREE(3) of:

Ling.   321-3 Phonology.
Ling.   322-3 Syntax.
Ling.   323-3 Morphology.
Ling.   324-3 Semantic.

Philosophy:

Any THREE(3) of:

Phil.   341-3 Philosophy of Science.
Phil.   343-3 Philosophy of Mind.
Phil.   344-3 Philosophy of Language I.
Phil.   444-4 Philosophy of Language II.

Computing Science:

Cmpt.   384-3 Symbolic Computing.
Cmpt.   413-3 Computational Linguistics.
Cmpt.   410-3 Artificial Intelligence Survey.

Cognitive Science:

CogS.   400-3 Advanced Cognitive Science.

HONOURS PROGRAMME IN COGNITIVE SCIENCE

A grade point average of 3.0 in all courses in the **Cognitive Science Programme** is required for entrance and continuation in the Honours programme. Students who are interested in enrolling in the Honours programme should consult the Coordinator of the Cognitive Science programme.

Two Options are available : Option A and Option B.

Option A.

A student must fulfill the requirements for a Major in **Cognitive Science**; and choose the courses listed below for one of the disciplines; and choose **COGS** 490 and **COGS** 491.

Cognitive Sciences:

CogS.Hons.Proj 1-5
CogS.Hons.Proj 2-5

Psychology:

Psych.	303-3	Perception.
Psych.	351-3	Child Psychology.
Psych.	425-5	Language and Thinking.

Linguistics:

Ling.	401-3	Advanced Phonetics.
Ling.	403-3	Advanced Phonology.
Ling.	405-3	Advanced Syntax.
Ling.	406-3	Advanced Semantics.

Philosophy:

Phil.	301-3	Epistemology
Phil.	331-3	Selected Topics II
Phil.	340-3	Philosophical Methods.
Phil.	453-4	Background to Analytical Philosophy.

Computing Science:

Cmpt.(MACM)	300-3	Formal Languages and Automata with Applications.
Cmpt.	383-3	Comparative Programming Languages.

Cmpt.(MACM)	402-3	Automata and Formal Languages.
Cmpt.	419-3	Topics in Articifical Intelligence.

Option B.

A student must fulfill the requirements for a Major in **Cognitive Science**; _and_ choose any combination of courses listed above totalling <u>at least ELEVEN(11)</u> credit hours and accepted by the CS Steering Committee; _and_ choose **COGS** 490 and **COGS** 491.

FORMER CALENDAR(1986/87) ENTRY APPENDED:

PROGRAM IN COGNITIVE SCIENCE

Location:	Room 7400 — Bennett Library
Telephone:	291-4852
~~Co-ordinator:~~	~~S. Davis, B.A. (Roch.), M.A., Ph.D. (Ill.),~~ ~~Professor of Philosophy~~
Co-ordinator:	S. Davies — Philosophy

Steering Committee V. Dahl — Computing Science
R.F. Hadley — Computing Science
P.P. Hanson — Philosophy
R. Blackman
A.C. Paranjpe — Psychology
— Psychology
T.A. Perry — Linguistics
E.W. Roberts — Linguistics
~~W. Turnbull — Psychology~~

Adviser:	D. Bevington
	Departmental Assistant
	Department of Philosophy
	291-4852

Students wishing further information on the program may also contact the Co-ordinator, members of the Cognitive Science Steering Committee or the Assistant to the Dean of the Faculty of Arts.

The program offers:

1) An interdepartmental B.A. in Cognitive Science

2) An honors program in Cognitive Science with a concentration in either Psychology, Linguistics, Philosophy or Computing Science.

In the last fifteen years there has been a great surge in the research in various aspects of cognition. This work has affected many fields including Psychology, Linguistics, Philosophy, and Computing Science, as well as Anthropology, Communication and Sociology. The extent of the influence varies from field to field, but the greatest impact within Psychology has been on the subfields of Psycholinguistics, Cognitive Psychology, and Developmental Psychology; within Philosophy, on Philosophy of Language, Philosophical Logic and Philosophy of Mind; and within Linguistics, on Semantics, Syntax, Phonology and Phonetics; and within Computing Science, on Artificial Intelligence.

People working within these areas find that they read the same literature and ask closely related questions in their research and teaching. It

has become evident that an increasing amount of work being done in these fields belongs to a common area which cuts across traditional departmental organization. There are now several journals publishing articles in Philosophy of Language, Psycholinguistics, Linguistics, Artificial Intelligence, and Cognitive Science, and a large number of collections of essays have been published which contain articles from each of these fields.

Within Simon Fraser University, this interrelation is reflected in a number of courses which draw on research being done in these areas. Presently, courses in the study of cognition/language are spread out over several different departments. The program in Cognitive Science draws many of them together into a unified program, and offers students a structured and integrated study of cognition.

Languages Other Than English

Most graduate schools require some proficiency in one or two languages other than English. Those who contemplate graduate studies are advised to include language courses in their programs.

Freedom of Entry and Exit

Though the program is highly structured, it does not require students to commit themselves as majors any earlier than other programs. Once embarked on the program as a major, it is possible until the seventh semester for a student to switch to any of the participating departments. Consequently, the student is not locked into the program. Students are advised to consult individual departments for information regarding completion of major requirements if they change from the Cognitive Science program to a departmental major.

Group Requirements

Any students enrolled in this program will automatically fulfill the group A and group C requirements, but will require 3 additional hours outside Psychology to fulfill the group B requirements. See the Faculty of Arts requirements for complete regulations.

Students enrolled in this program must fulfill the Faculty of Arts breadth requirements

MAJOR IN COGNITIVE SCIENCE

(see Faculty of Arts: General Regulations)

LOWER DIVISION REQUIREMENTS (51 hours)

PSYC	101-3	Introductory Psychology
	180-3	Brain and Behavior
	201-3	Research Methods in Psychology
	210-3	Data Analysis in Psychology
LING	130-3	Practical Phonetics
	220-3	Introduction to General Linguistics
	221-3	Introduction to Descriptive Techniques I (Phonology and Morphology)
	222-3	Introduction to Descriptive Techniques II (Syntax)
PHIL	100-3	Knowledge and Reality
	203-3	Metaphysics
	210-4	Elementary Formal Logic I
CMPT	101-4	Introduction to a High Level Programming Language A
	105-3	Fundamental Concepts of Computing
	201-4	Data and Program Organization
	205-3	Introduction to Formal Topics in Computing Science
MATH	151-3	Calculus I

UPPER DIVISION REQUIREMENTS (48 - 51 hours)

A student chooses three out of the four disciplines in the program. The student is required to take all the upper division courses below in the three disciplines chosen, one course from the group of elective courses in each of the three selected disciplines, and the two starred courses in the one remaining discipline.

REQUIRED COURSES:

PSYC	*320-3	Cognitive Processes
		and either
	*365-3	Psycholinguistics
		or
	*425-5	Language and Thinking
LING	403-3	Generative Phonology
	*405-3	Transformational Syntax

	406-3	Introduction to Semantics
	*422-3	Linguistic Theory
PHIL	343-3	Philosophy of Mind
	*344-3	Philosophy of Language I
	*444-4	Philosophy of Language II
CMPT	*380-3	Computational Linguistics
	384-3	Symbolic Computing
	*410-3	Artificial Intelligence Survey
	411-3	Artificial Intelligence Topics

and

ELECTIVE COURSES

PSYC	303-3	Perception
	335-3	Sensation I
	351-3	Child Psychology
	402-5	Seminar in the History of Psychology
LING	300-3	Languages of the World: An Introduction to Topology
	401-3	Advanced Phonetics
	402-3	General Phonology
	404-3	Morphology
	407-3	Historical Linguistics and Dialectology
PHIL	301-3	Epistemology
	340-3	Philosophical Methods
	341-3	Philosophy of Science
	453-4	Background to Analytical Philosophy
CMPT	351-3	Introduction to Computer Graphics. (MATH 232 is a prerequisite.)
	383-3	Comparative Programming Languages
	418-3	Special topics in Computing Science I (when content is relevant to Cognitive Science)
MACM	306-3	Introduction to Automata Theory
	402-3	Automata and Formal Languages

HONORS PROGRAM IN COGNITIVE SCIENCE WITH A CONCENTRATION IN PSYCHOLOGY, LINGUISTICS, PHILOSOPHY, OR COMPUTING SCIENCE

An honors program is offered for students who wish to concentrate in one of the areas in Cognitive Science and is strongly recommended for students who plan to do post-graduate work.

Students who wish to do an honors degree in Cognitive Science choose one of the four disciplines in the program in which they wish to concentrate. The requirements for a concentration in each of the disciplines are listed below.

A grade point average of 3.0 in all courses in the Cognitive Science program is required for entrance and continuation in the honors program. Students who are interested in enrolling in the honors program should consult the Coordinator of the Cognitive Science program.

Lower Division Requirements

These are identical to the lower division requirements set out under the major in Cognitive Science. In addition, students concentrating in Psychology must complete PSYC 207-3. Furthermore, students concentrating in Computer Science must complete CMPT 290-3 and MATH 232-3.

Upper Division Requirements

Psychology Concentration

Students pursuing an honors degree in the Cognitive Science program with a concentration in Psychology must fulfill the following requirements:

1) Completion of the upper division requirements as specified for the Cognitive Science program with Psychology chosen as one of the disciplines;

2) Completion of all Psychology elective courses as specified for the Cognitive Science program;

3) Completion of the following courses:

PSYC	301-3	Intermediate Research Methods and Data Analysis
	490-5	Honors Project
	499-5	Honors Project

Students intending to enroll in PSYC 490 and 499 must first consult the members of the Cognitive Science Steering Committee from Psychology.

Total credits in upper division Psychology courses: 38 hours. This is equivalent to an honors degree in Psychology.

Linguistics Concentration

Students pursuing an honors degree in the Cognitive Science program with a concentration in Linguistics must fulfill the following requirements:

1) Completion of the upper division requirements as specified for the Cognitive Science program with Linguistics chosen as one of the disciplines;

2) Completion of all Linguistics elective courses specified for the Cognitive Science program;

3) Completion of the following courses:

LING	408-3	Field Linguistics
	419-3	History of Linguistics
	490-3	Honors Essay

Students intending to enroll in LING 490 must consult the members of the Cognitive Science Steering Committee from Linguistics.

Total credits in upper division Linguistics courses: 36 hours. A concentration in Linguistics constitutes a major in Linguistics, but is not equivalent to an honors degree in Linguistics.

Philosophy Concentration

Students pursuing an honors degree in the Cognitive Science program with a concentration in Philosophy must fulfill the following requirements:

1) Completion of the upper division requirements as specified for the Cognitive Science program with Philosophy chosen as one of the disciplines;

2) Completion of all Philosophy elective courses as specified for the Cognitive Science program;

3) Completion of one other upper division course selected from the following courses:

PHIL	310-3	Modal Logic and Its Applications
	354-3	Descartes and Rationalism
	355-3	Hume and Empericism

4) Completion of PHIL 477-5 and 478-5.

Students intending to enroll in PHIL 477 and 478 must first consult the members of the Cognitive Science Steering Committee from Philosophy.

Total credits in upper division Philosophy courses: 36 hours. This is not equivalent to a major or an honors degree in Philosophy.

Computing Science Concentration

Students pursuing an honors degree in the Cognitive Science program with a concentration in Computing Science must fulfill the following requirements:

1) Completion of the upper division requirements as specified for the Cognitive Science program with Computing Science chosen as one of the disciplines;

2) Completion of the following upper division courses:

CMPT	305-3	Computer Simulation and Modeling
	351-3	Introduction to Computer Graphics
	354-3	File and Database Structures
	383-3	Comparative Programming Languages
	390-3	Digital Circuits and Systems
MACM	306-3	Introduction to Automata Theory

3) Completion of two further upper division Computing Science courses drawn from Table 1 which is found under the upper divison requirements for Computing Science.

Total credits in upper division Computing Science courses: 36-38 hours. This is not equivalent to a major or honors degree in Computing Science.

Course Descriptions

Course descriptions for Psychology, Linguistics, Philosophy and Computing Science courses are given on pages 198, 187, 193 and 154 respectively.

1. Calendar Information:

Programme:
~~Department~~: Cognitive Science

Abbreviation Code: __COGS__ Course Number: __200__ Credit Hours: __3__ Vector: __2-1-0__

- Title of Course: Basic Cognitive Science

Calendar Description of Course:
This course provides a basic integrative overview of the linguistic
philosophical, psychological, and computer-science aspects of cognition.

Nature of Course: Lecture (2) - Tutorial (1)

Prerequisities (or special instructions):

Completion of BASIC requirements of the programme.

What course (courses), if any, is being dropped from the calendar if this course
is approved:

None.

2. Scheduling:

How frequently will the course be offered? Once per year.

Semester in which the course will first be offered? Fall 1987 or Spring 1988

Which of your present faculty would be _available_ to make the proposed offering
possible? Members of Cog. Sci. Programme Steering Committee and Cog. Sci. Research
Group - Bakan, Blackman, Bradley, Dahl, Davis, Hadley, Hanson, Modigliani, Perry,

3. Objectives of the Course: Paranjpe, Roberts

To provide an LD integrative component for the Cog. Sci. programme.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty   Allocation of teaching time - one course/yr (3 hrs)

Staff

Library

Audio Visual

Space

Equipment

APPROVAL

Date: September 26/86

R Blackman
Department Chairman

Oct 16, 1986

Dean

Chairman, SCUS

SCUS 73-34b: (When completing this form, for instructions see Memorandum SCUS 73-34a.
Attach course outline)

COGS 200-3 Basic Cognitive Science.

Selected Bibliography:

J.R.Anderson, (1983), *The Architecture of Cognition*, Harvard U.P., Cambridge, Mass..

J.R.Anderson, (1985), *Cognitive Psychology and Its Implications* (2nd.ed.), Freeman, New York.

M.A.Boden, (1977), *Artificial Intelligence and Natural Man*,Basic Books.

D.Dennett, (1978), *Brainstorms*, Bradford Books. M.I.T. Press.

P.Churchland, (1984), *Matter and Consciousness*, M.I.T. Press.

M.Gardner,(1985), *The Mind's New Science: A History of the Cognitive Revolution*, Basic Books, New York.

J.Haugeland, (1981), *Mind Design*, Bradford Books, M.I.Y. Press.

C.G.Hempel, (1966), *Philosophy of Natural Science*, Prentice Hall, Englewood Cliffs, N.J..

E.Nagel, (1961), *The Structure of Science*, Harcourt, Brace & World, Inc.

W.H.Newton-Smith, (1981), *The Rationality of Science*, Routledge & Keegan Paul, Boston.

T.M. Olshewsky (ed.),(1969), *Problems in the Philosophy of Language*, Holt, Rinehart and Winston, Inc..

K.R.Popper, ((1959)1965), *The Logic of Scientific Discovery*, Harper & Row, New York.

K.R.Popper,(1962)1968), *Conjectures and Refutations:The Growth of Scientific Knowledge*, Harper & Row, New York.

R.Rorty, (1967), *The Linguistic Turn*, Univ. of Chicago P..

1. Calendar Information:

Programme:
Department: Cognitive Science

Abbreviation Code: COGS   Course Number: 400   Credit Hours: 3   Vector: 2-1-0

Title of Course: Advanced Cognitive Science

Calendar Description of Course:
This course is an extension of COGS 200 and provides a summative, critical overview of the cognitive-scientific features of the Computing Science, Linguistics, Psychology, and Philosophy courses that make up the core of the programme.

Nature of Course: Lecture (2) - Tutorial (1)

Prerequisities (or special instructions):

At least six (6) credit hours from each of the three required UL/ADVANCED components (18 hours UD)

What course (courses), if any, is being dropped from the calendar if this course is approved:
              None

2. Scheduling:

How frequently will the course be offered?   Once per year

Semester in which the course will first be offered? Fall 1988

Which of your present faculty would be available to make the proposed offering possible? Members of the Cog. Sci. Programme Steering Committee and Cog. Sci. Research Group - Bakan, Blackman, Bradley, Dahl, Davis, Hadley, Hanson, Modigliani,

3. Objectives of the Course: Perry, Paranjpe, Roberts

To provide an UD integrative and critical component for the Cog. Sci. programme.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty   Allocation of teaching time - one course/yr (3 hrs)

Staff

Library

Audio Visual

Space

Equipment

APPROVAL

Date: September 26/86   Oct 16, 586

_____   _____   _____
Department Chairman   Dean   Chairman, SCUS

SCUS 73-34b: (When completing this form, for instructions see Memorandum SCUS 73-34a.
Attach course outline)

Advanced Selective General Bibliography:

The bibliography cited for **COGS** 200, plus:

R.P.Botha, (1973), *The Justification of Linguistic Hypotheses*, Mouton, The Hague.

R.W.Brislin(ed.), (1976), *Translation: Applications and Research*, Gardner Press.

J.S.Bruner, (1983), *In Search of Mind*, Harper & Row, New York.

N.Chomsky,(1975), *Reflections on Language*, Pantheon Books.

N.Chomsky, (1981), *Lectures on Government and Binding*, FORIS, Dordrecht-Holland.

N.Chomsky,(1982), *Some Concepts and Consequences of theTheory of Government and Binding*, M.I.T.Press, Cambridge, Mass..

N.Chomsky, (1981), *Lectures on Government and Binding*, FORIS, Dordrecht-Holland.

J.A.Fodor, (1975), *The Language of Thought*, Thos. Crowell, New York.

J.A.Fodor, (1980), *Representations*, Bradford Books, M.I.T. Press.

J.A.Fodor, (1983), *The Modularity of Mind*, Bradford Books,M.I.T. Press, Cambridge, Mass..

Z.W.Pylyshyn (1985), *Computation and Cognition*, Bradford Books, M.I.T. Press.

I.Hacking (1983), *Representing and Intervening*, Cambridge U.P., Cambridge.

R.Jakobson (ed.), (1961) *Structure of Language and its Mathematical Aspects: Proceedings of the Twelfth Symposium in Applied Mathematics*, American Mathematical Society.

P.N.Johnson-Laird, (1983), *Mental Models: Towards a Cognitive Science of Language, Inference, annd Consciousness*, Harvard U.P., Cambridge, Mass..

K.N.Leibovic (ed.),(1969), *Information Processing in the Nervous System*, Springer-Verlag.

E.Lenneberg, (1967), *Biological Foundations of Language*, John Wiley & Sons.

D.Lightfoot, (1983), *The Language Lottery:Towards a Biology of Grammars*, M.I.T. Press.

A.P.Martinich(ed.), (1985), *The Philosophy of Language*, O.U.P., Oxford.

P.McCorduck, (1979), *Machines Who Think*, W.H.Freeman, San Francisco.

E.Nagel, P. Suppes,A.Tarski(eds.), (1962), *Logic,Methodology and Philosophy of Science*, Stanford U.P..

A.Newell and H.A.Simon, (1972), *Human Problem Solving*, Prentice Hall, Englewood Cliffs, N.J..

Z.W.Pylyshyn (1985), *Computation and Cognition*, Bradford Books, M.I.T. Press.

R.W.Reiber(ed.), (1976), *The Neuropsychology of Language*, Plenum Press.

W.B.Weimer & D.S.Palermo (eds.), (1974), *Cognition and the Symbolic Process*, John Wiley & Sons.

J.Weizenbaum, (1976), *Computer Power and Human Reason*, W.H.Freeman, San Francisco.

JOURNALS:

Artifical Intelligence.
Behavior and Brain Sciences.
Brain and Behavior.
Brain and Language.
Cognitive Science.
Computational Intelligence.
Computational Linguistics.
Neuropsychlogia.

1. Calendar Information:

Programme:
~~Department~~: Cognitive Science

Abbreviation Code: COGS   Course Number: 490   Credit Hours: 5   Vector: 0-0-0

Title of Course: Honours Project I

Calendar Description of Course:
An in-depth investigation of a topic in Cognitive Science culminating in a critical literature review and the formulation of a research proposal.

Nature of Course: Seminar - Supervision Tutorial

Prerequisities (or special instructions):
Approval of Cog. Science Programme Steering Committee after student has completed a Cognitive Science Major and at least two courses specified under Honours in the programme calendar entry.

What course (courses), if any, is being dropped from the calendar if this course is approved:
          None

2. Scheduling:

How frequently will the course be offered? As required - on a person-by-person basis

Semester in which the course will first be offered? Spring 1988/earliest

Which of your present faculty would be available to make the proposed offering possible?   Any member(s) of Cog. Sci. Programme Steering Committee and
          Cog. Sci. Research Group.

3. Objectives of the Course:

To provide Honours students with the individual opportunity to review literature in a critical manner and to identify and formulate an area of research.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty   None

Staff

Library

Audio Visual

Space

Equipment

APPROVAL

Date: September 26/86   Oct 16, 1986   _____

R.B. Haltman   E. Wilson   _____
Department Chairman   Dean   Chairman, SCUS

SCUS 73-34b: (When completing this form, for instructions see Memorandum SCUS 73-34a.
          Attach course outline)   ...

NEW COURSE PROPOSAL FORM

1. **Calendar Information:**

Programme:
~~Department~~: Cognitive Science

Abbreviation Code: COGS   Course Number: 491   Credit Hours: 5   Vector: 0-0-0

Title of Course: Honours Project II

Calendar Description of Course:
Continuation of COGS 490 on a different in-depth investigation of a Cognitive Science topic, culminating in the completion of a substantive piece of research.

Nature of Course: Seminar - Supervision Tutorial

Prerequisities (or special instructions):
Approval of Cog. Sci. Programme Steering Committee either when student has completed 490-5 or when student is taking 490-5.

What course (courses), if any, is being dropped from the calendar if this course is approved: None

2. **Scheduling:**

How frequently will the course be offered?   As required - on a person-by-person basis

Semester in which the course will first be offered? Spring-Fall 1988 (earliest)

Which of your present faculty would be available to make the proposed offering possible?   Any member(s) of Cog. Sci. Programme Steering Committee and Cog. Sci. Research Group

3. **Objectives of the Course:**

To provide Honours students with the opportunity to extend the research proposal established in 490-5, to identify another area of research and to formulate a research proposal.

4. **Budgetary and Space Requirements** (for information only)

What additional resources will be required in the following areas:

Faculty

Staff

Library   NONE

Audio Visual

Space

Equipment

APPROVAL

Date: September 26/86   Sept 16/ 1986

_____   _____   _____
Department Chairman   Dean   Chairman, SCUS

SCUS 73-34b: (When completing this form, for instructions see Memorandum SCUS 73-34a.
Attach course outline)