Program/Major or Minor/Concentration Revision Form

(07/2004)

1.0 Degree Title
Specify the two degrees for concurrent degree programs

Bachelor of Science

1.1 Major (Legacy= Subject) (30-char. max.)

Joint Major in Statistics and Computer Science

1.2 Concentration (Legacy = Concentration/Option)
If applicable (30 char. max.)

1.3 Minor (with Concentration, if applicable)
(30 char. max.)

1.4 Category

- ☐ Faculty Program (FP)
- ☐ Major
- ☒ Joint Major
- ☐ Major Concentration (CON)
- ☐ Minor
- ☐ Minor Concentration (CON)
- ☐ Honours (HON)
- ☐ Joint Honours Component (HC)
- ☐ Internship/Co-op
- ☐ Thesis (T)
- ☐ Non-Thesis (N)
- ☐ Other

Please specify

1.5 Complete Program Title

B. Sc Joint Major in Statistics and Computer Science

2.0 Administering Faculty/Unit

Science/Mathematics and Statistics

Offering Faculty/Department

Science/Mathematics and Statistics

3.0 Effective Term of revision or retirement
Please give reasons in 5.0 "Rationale" in the case of retirement
(Ex. Sept. 2004 = 200409) ☐ Retirement

Term: 200809

4.0 Existing Credit Weight: 72

Proposed Credit Weight: 72

5.0 Rationale for revised program

The School of Computer Science has recently revised all their programs with the goal of making the treatment of COMP 202 more uniform. The Department of Mathematics and Statistics is administering the joint programs with Computer Science. By request from the School of Computer Science we modified the treatment of COMP 202 in these programs to make them consistent with the programs administered by the School of Computer Science.

6.0 Revised Program Description (Maximum 150 words)

Students entering the Joint Major program in Statistics and Computer Science are normally expected to have completed MATH 133, MATH 140, MATH 141 and COMP 202 or their equivalents. Otherwise they will be required to make up any deficiencies in these courses over and above the 72 credits of courses in the program specification.

7.0 List of existing program and proposed program

Existing program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)	Proposed program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)

EXISTING as of Calendar 2007/08 (ONLINE)

JOINT MAJOR IN STATISTICS AND COMPUTER SCIENCE
(72 credits)

Required Courses (48 credits)
COMP 206 (3) Introduction to Software Systems
COMP 250* (3) Introduction to Computer Science
COMP 251 (3) Data Structures and Algorithms
COMP 273 (3) Introduction to Computer Systems
COMP 302 (3) Programming Languages and Paradigms
COMP 330 (3) Theoretical Aspects: Computer Science
COMP 350 (3) Numerical Computing
or MATH 317 (3) Numerical Analysis
COMP 360 (3) Algorithm Design Techniques
MATH 222 (3) Calculus
MATH 235 (3) Algebra 1
MATH 236 (3) Algebra 2
or MATH 223 (3) Linear Algebra
MATH 242 (3) Analysis 1
MATH 314 (3) Advanced Calculus
MATH 323 (3) Probability
MATH 324 (3) Statistics
MATH 423 (3) Regression and Analysis of Variance

*Students with no basic knowledge of any high level programming language (e.g., Fortran, Basic, Pascal, C, C++, Java) may take COMP 202 and have it count as a complementary course in Computer Science.

PROPOSED (for Calendar 2008/09)

JOINT MAJOR IN STATISTICS AND COMPUTER SCIENCE
(72 credits)

Required Courses (**51** credits)
COMP 202* (3) Introduction to Computing 1
COMP 206 (3) Introduction to Software Systems
COMP 250 (3) Introduction to Computer Science
COMP 251 (3) Data Structures and Algorithms
COMP 273 (3) Introduction to Computer Systems
COMP 302 (3) Programming Languages and Paradigms
COMP 330 (3) Theoretical Aspects: Computer Science
COMP 350 (3) Numerical Computing
or MATH 317 (3) Numerical Analysis
COMP 360 (3) Algorithm Design Techniques
MATH 222 (3) Calculus
MATH 235 (3) Algebra 1
MATH 236 (3) Algebra 2
or MATH 223 (3) Linear Algebra
MATH 242 (3) Analysis 1
MATH 314 (3) Advanced Calculus
MATH 323 (3) Probability
MATH 324 (3) Statistics
MATH 423 (3) Regression and Analysis of Variance

* Students who have sufficient knowledge in a programming language do not need to take COMP 202 but can replace it with an additional Computer Science complementary course.

Continued on next page..

Attach extra page(s) as needed

7.0 List of existing program and proposed program

Existing program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)

Joint Majors in Statistics and Computer Science (Cont'd)

Complementary Courses (24 credits)
12 credits in Mathematics selected from

MATH 327 (3) Matrix Numerical Analysis
MATH 340 (3) Discrete Structures
or MATH 350 Graph Theory and Combinatorics
MATH 352 (1) Problem Seminar
MATH 410 (3) Majors Project
MATH 447 (3) Stochastic Processes
MATH 523 (4) Generalized Linear Models
MATH 524 (4) Nonparametric Statistics
MATH 525 (4) Sampling Theory and Applications

12 credits in Computer Science selected as follows:

At least 6 credits selected from

COMP 423 (3) Data Compression
COMP 424 (3) Topics: Artificial Intelligence 1
COMP 462 (3) Computational Biology Methods
COMP 490 (3) Introduction to Probabilistic Analysis of Algorithms
COMP 526 (3) Probabilistic Reasoning and AI
COMP 540 (3) Matrix Computation
COMP 547 (3) Cryptography and Data Security
COMP 564 (3) Computational Gene Regulation
COMP 566 (3) Discrete Optimization 1
COMP 567 (3) Discrete Optimization 2

the remaining Computer Science credits selected from COMP courses at the 300 level or above except COMP 396, COMP 400 and COMP 431.

Proposed program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)

Joint Majors in Statistics and Computer Science (Cont'd)

Complementary Courses (21 credits)
12 credits in Mathematics selected from

MATH 327 (3) Matrix Numerical Analysis
MATH 340 (3) Discrete Structures
or MATH 350 Graph Theory and Combinatorics
MATH 352 (1) Problem Seminar
MATH 410 (3) Majors Project
MATH 447 (3) Stochastic Processes
MATH 523 (4) Generalized Linear Models
MATH 524 (4) Nonparametric Statistics
MATH 525 (4) Sampling Theory and Applications

9 credits in Computer Science selected as follows:

At least 6 credits selected from

COMP 423 (3) Data Compression
COMP 424 (3) Topics: Artificial Intelligence 1
COMP 462 (3) Computational Biology Methods
COMP 490 (3) Introduction to Probabilistic Analysis of Algorithms
COMP 526 (3) Probabilistic Reasoning and AI
COMP 540 (3) Matrix Computation
COMP 547 (3) Cryptography and Data Security
COMP 564 (3) Computational Gene Regulation
COMP 566 (3) Discrete Optimization 1
COMP 567 (3) Discrete Optimization 2

the remaining credits selected from Computer Science courses at the 300 level or above (except COMP 364, COMP 396, COMP 400, COMP 431) and ECSE 508.

Attach extra page(s) as needed

8.0 Consultation with Related Units ☑ Yes ☐ No

Financial Consult ☐ Yes ☐ No

Attach list of consultations

9. Approvals

Routing Sequence	Name	Signature	Date
Department	Axel Hundemer		
Curric/Acad Committee			
Faculty 1			
Faculty 2			
Faculty 3			
SCTP			
GS			
APPC			
Senate			

Submitted by

Name	
Phone	
Email	
Submission Date	

To be completed by ARR:

CIP Code