

MAY 10

**Library Resource Form Required**

Submission Deadlines: **Fall - October 11, 2005 Spring - February 14, 2006**

**TITLE Major Change to the Statistics Concentration**

Sponsor(s)	Christopher J. Lacke	e-mail: lacke@rowan.edu
	Dexter C. Whittinghill	e-mail: whittinghill@rowan.edu
		e-mail:

**DEPARTMENT** Mathematics

**College** LAS

If **LAS** -check: \_\_\_\_\_ History/Humanities \_\_\_\_\_ Social/Behavioral Sciences

\_\_\_\_\_  Math/Science

**UNDERGRADUATE** \_\_\_\_\_ **GRADUATE**

**DESCRIBE:**

\_\_\_\_\_ New Degree Program \_\_\_\_\_ New concentration, specialization, track

\_\_\_\_\_ New Major \_\_\_\_\_ New Minor

\_\_\_\_\_ New Certificate of Graduate Study Program (COGS & COGA)

Major changes of degree requirements/major/minor or certificate program

\_\_\_\_\_ Changes to College name, School, Department, or Degree

\_\_\_\_\_ Quasi curricular change

**Signatures Required: representing approval before submission to Office of the Senate**

Department Chair: *Samuel L. Jackson* Date: 2/8/06

Department CURRICULUM Chair: *Abdul Henson* Date: 2/14/06

Academic DEAN: *Jay Hunt* Date: 2-14-06

COLLEGE CURRICULUM COMMITTEE: Open Hearing Date: 3/3/06

Approved: *[Signature]*

Not Approved: \_\_\_\_\_

Signature: College Curriculum Chair \_\_\_\_\_

Signature: SENATE CURRICULUM CHAIR *[Signature]*

Date: 4/12/06

Comments: \_\_\_\_\_

Signature: Executive Vice President/Provost: *[Signature]*

Date: 5/12/06

Approved:

Not Approved: \_\_\_\_\_

Signature: REGISTRAR *[Signature]*

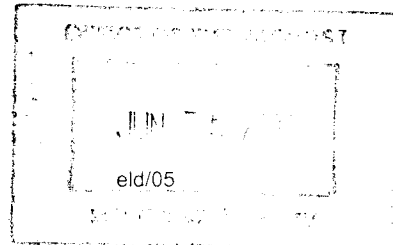
Date: 5/25/06

Course Description Received & Approved

Hegis Taxonomy & Course # \_\_\_\_\_

Notification Forward:

_____ SCC CHAIR	_____ Academic Dean
_____ IR	_____ Department Chair
_____ CAP	_____ VP/Student Affairs
_____ Registrar	_____ Other-



**Rowan University  
Department of Mathematics**

**Proposal for Major Change to the Statistics Concentration**

**1. Details**

**a. Change Requested**

We request the following changes to the Statistics Concentration.

From

Name: Statistics Concentration

HEGIS Number	Core Courses	Semester Hours
1702.260	Statistics I	
	or	3
2007.311	Statistical & Research Methods in Psychology I*	
1702.261	Statistics II	
	Or	3
2007.312	Statistical & Research Methods in Psychology II*	
1702.371	Statistical Design of Experiments I	3
	Total Core	9

\* Note: 2007.311 and 2007.312 Statistical & Research Methods in Psych I and II were combined into a single six-credit course, 2007.210 Statistical & Research Methods in Psychology

Electives (9 semester hours required)

- 1702.360 Probability and Statistics I 3 s. h.
- 1702.361 Probability and Statistics II 3 s. h.
- 1702.372 Statistical Design of Experiments II 3 s. h.
- 0509.374 Research Methods in Marketing 3 s. h.
- 0699.361 Introduction to Survey Research 3 s. h.
- 2204.480 Econometrics 3 s. h.
- 2206.350 Quantitative Methods in Geography 3 s. h.
- 2204.282 Economic Statistics 3 s. h.
- 2208.421 Sociological Methods and Statistics 6 s. h.

To

Name: Concentration in Statistics and Operations Research

HEGIS Number	Core Courses	Semester Hours
1702.260	Statistics I	3
1702.261	Statistics II	3
1702.360	Probability and Statistics I	3
	Total Core	9

Electives (9 semester hours required)

1702.361 Probability and Statistics II 3 s. h.

1702.371 Statistical Design of Experiments I 3 s. h.

1702.372 Statistical Design of Experiments II 3 s. h.

1703.411 Deterministic Models in Operations Research 3 s. h.

1703.412 Stochastic Models in Operations Research 3 s. h.

Up to one three-credit course may be approved on a case-by-case basis.

b. Sponsors: Christopher J. Lacke and Dexter C. Whittinghill, Department of Mathematics

## 2. Rationale

### a. Need for the Change

The current Concentration in Statistics was approved during the 1994-95 academic year, becoming an official concentration in the fall of 1995. During the eleven years it has been in existence, only one student has completed the concentration. That student was a math major who had to take some of the courses as independent studies in order to complete the requirements.

The original concentration was designed so that students from a wide variety of disciplines could “enhance their own skills in data analysis and develop skills in experimental design.” The departments included Mathematics, Economics, Psychology, Sociology, Business (primarily Marketing) and Communications Studies. Despite numerous attempts at promotion by the Math Department, interest in the program from people outside the Math Department was negligible.

At the time the Concentration was developed, the Rowan Math Department did not have an applied statistician. Since then, the Department has acquired two, who happen to be the sponsors of this proposal. In addition, two courses in Operations Research were added to the undergraduate curriculum. Both have been successful, and enrollments have increased as students hear about the nature of the courses. Because the two fields are strongly intertwined, it makes sense for the Concentration to include both topics.

The removal of the electives from the departments other than Mathematics is occurring for several reasons. Econometrics (HEGIS #2204.480) no longer exists. In addition, a new program has been developed by a department involved in the original concentration. The Concentration in Geographical Information Systems, offered by the Department of Geography and Anthropology, combines a set of statistics and mathematics courses with some computer science and geography courses to provide a very strong opportunity for another set of students.

Interest in the altered concentration is strong, as demonstrated by the fact that math major enrollment levels in Statistics I and II have increased in recent years. Majors are interested in a concentration that meets their needs for an entry level position in these fields, or for a progression to graduate work in Statistics and/or Operations Research. They would also like to complete the concentration within the framework of the undergraduate degree in Mathematics. All of the elective courses in the revised concentration count toward the Mathematics major, whereas only the HEGIS #1702 courses in the existing proposal count, so we feel that the proposed changes to this concentration meet these goals.

### **b. Curricular Effect**

As mentioned earlier, math major enrollments in Statistics I and II have increased over the last seven years, despite the fact that Statistics I and II do not count toward the Mathematics major. Prior to this time, virtually no math major enrolled in these courses. Independent of this proposal, we expect to see additional increases in these enrollments as students identify the importance of statistical knowledge in the workplace.

Enrollments in the other core course, 1702.360 Introduction to Probability and Statistics I should remain relatively constant. The course is a requirement for the major, so the only increase would be caused by a sudden interest in the Concentration among majors in another department, with Finance being the most likely candidate.

The Math Department elective courses currently run below full enrollment, typically between 15 and 20, if not lower. We hope that the revised Concentration will increase enrollments in these courses, but we do not expect a growth level that will require additional sections.

### **3. Letters of Consultation**

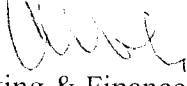
Letters of consultation were requested from the following:

- Dr. Carol Welsh, Chair, Department of Accounting and Finance ✓
- Dr. Cynthia Corison, Chair, Department of Communication Studies. ✓
- Dr. Bela Mukhoti, Chair, Department of Economics
- Dr. Richard Scott, Chair, Department of Geography and Anthropology ✓
- Dr. Robert Fleming, Chair, Department of Management and MIS ✓
- Dr. Berhe Habte-Giorgis, Chair, Department of Marketing ✓
- Dr. Keiko Stoeckig, Chair, Department of Psychology ✓
- Dr. James Abbott, Chair, Department of Sociology ✓



February 2, 2006

To: Christopher Lacke  
Associate Professor of Mathematics

From: Carol N. Welsh   
Chairperson Accounting & Finance

Subject: Consultation – Curriculum Proposal for Concentration in Statistics

The Department of Accounting & Finance supports your curriculum proposal to make changes to the Concentration in Statistics. The proposal does not impact on the Statistics requirements for Accounting and Finance students, as Statistics I and Statistics II are both going to continue to be offered by your Department. Additionally, the changes can likely make this an attractive concentration for the finance specialization students.

Our Department supports your proposal which offers students across campus the ability to add a concentration in Statistics.

**Lacke, Christopher J.**

**From:** Corison, Cynthia  
**Sent:** Wednesday, February 01, 2006 11:59 AM  
**To:** Lacke, Christopher J.  
**Subject:** RE: request for letter of consultation

Hi Chris,

I see no problems with the proposal, overall. One thing that needs to be changed is "department of Communication" to "department of Communication Studies." Thanks,

Cindy

**From:** Lacke, Christopher J.  
**Sent:** Wednesday, February 01, 2006 11:01 AM  
**To:** Scott, Richard; Welsh, Carol; Fleming, Robert S.; Habte-Giorgis, Berhe; Stoeckig, Keiko; Abbott, James R.; Corison, Cynthia; Mukhoti, Bela; Hecht, Gregory B.  
**Cc:** Czochor, Ronald; Whittinghill, Dexter C.; Lacke, Christopher J.  
**Subject:** request for letter of consultation

Hi Bela, Berhe, Bob, Carol, Cynthia, Dick, Greg, Jim, and Keiko:

I have attached a copy of our proposal to make changes to the Concentration in Statistics. You are receiving this because your department has a course in the current form of the concentration, and/or you require your majors to take at least Statistics 1. The reasons are in the Rationale section (as they should be). If you have any concerns, please let me know.

The one request that I have to make is to please get back to me quickly, as the spring curriculum deadline is on 2/14. I have meant to write this change for a couple of years, but we now have a few math majors who are eligible to complete the revised concentration prior to graduation. I'm not mandating your approval – I just want to let them know if it will be feasible for them.

There is one last thing, which I will add to the proposal if people feel that it is appropriate. We have a math minor. Students who have to take Stat 1 and 2 who also choose to minor in math would have to take two math courses above the minor in order to complete the concentration.

Thanks very much for your help.

Chris

Christopher J. Lacke, Ph.D.  
Associate Professor of Mathematics  
Rowan University  
201 Mullica Hill Rd.  
Glassboro, NJ 08028  
lacke@rowan.edu  
(856) 256-4500 x3897 (office)  
(856) 256-4816 (fax)

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The Penguin Credo - Never bathe in hot oil



*Department of Geography and Anthropology*

Dr. Chris Lacke  
Department of Mathematics  
Rowan University  
Glassboro, NJ 08028

Dear Chris:

I am writing in response to your request for a letter of consultation concerning the changes you propose for the program, Concentration in Statistics. We have reviewed your proposal and can lend our full support to it. I remember the original program and thought it a very good idea at the time. Clearly, in time things change and programs need to be altered to meet new realities. We wish you the best of luck with your new orientation.

Sincerely yours,

A handwritten signature in cursive script that reads "Richard A. Scott".

Richard A. Scott, Professor and Chair of Geography & Anthropology

**Lacke, Christopher J.**

**From:** RSFHAZMAT@aol.com  
**Sent:** Wednesday, February 08, 2006 9:49 PM  
**To:** Lacke, Christopher J.  
**Cc:** Fleming, Robert S.; RSFHAZMAT@aol.com  
**Subject:** Fwd: proposal

Dear Chris:

Thank you for affording the Management/MIS Department the opportunity to review the attached curriculum proposal regarding the Statistics Concentration. We find your proposal to be a sound one and commend your department for recognizing the need for this change.

Please accept this communication as our affirmative support for your proposal.

Robert S. Fleming  
Chairperson  
Management/MIS Department

**To:** Lacke, Christopher J.  
**From:** Berhe Habte-Giorgis  
Chair, Department of Marketing  
**Date:** 2/14/2006  
**Re:** Letter of Consultation

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I would like to inform you that after carefully reviewing the changes you are proposing in the Concentration of Statistics, the Marketing Department extends its support for the proposal. From the detailed description you presented, Stat I is not going to be changed. That is our main concern.

We appreciate the support the Mathematics Department provides to the Marketing program. Good luck in your effort and let me know if there is anything else we can do for you.

**Lacke, Christopher J.**

**From:** Hecht, Gregory B.  
**Sent:** Monday, February 06, 2006 4:24 PM  
**To:** Lacke, Christopher J.  
**Subject:** Re: request for letter of consultation

MEMO TO: Christopher Lacke  
From: Gregory Hecht

Re: Statistics Concentration curriculum proposal

Chris --

Thank you for consulting with the Biological Sciences Department regarding your curricular proposal entitled "Major Change to the Statistics Concentration."  
We anticipate that your proposed changes will have minimal impact on our Biology majors. Our Dept fully supports the proposal.

Sincerely,

Gregory B. Hecht, Ph.D.  
Interim Chairperson  
Associate Professor of Microbiology  
& Molecular Biology  
Department of Biological Sciences  
Rowan University  
201 Mullica Hill Road  
Glassboro, NJ 08028  
Office: Science Hall 130D  
Laboratory: Science Hall 221  
(856) 256-4834 (office, phone mail)  
(856) 256-4500 x3577 (phone mail only)  
x3024 (lab)  
Fax: (856) 256-4478  
hecht@rowan.edu  
<http://users.rowan.edu/~hecht>  
<http://www.rowan.edu/biology>

**Lacke, Christopher J.**

**From:** Abbott, James R.  
**Sent:** Thursday, February 02, 2006 9:51 AM  
**To:** Lacke, Christopher J.  
**Subject:** RE: request for letter of consultation

Chris:

Sociology supports the proposed changes in the Concentration in Statistics. We have no objection. (For what it's worth, Sociology's 6sh Methods and Statistics course is now split. A nasty divorce indeed.)

Jim Abbott  
Sociology

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**From:** Lacke, Christopher J.  
**Sent:** Wednesday, February 01, 2006 11:01 AM  
**To:** Scott, Richard; Welsh, Carol; Fleming, Robert S.; Habte-Giorgis, Berhe; Stoeckig, Keiko; Abbott, James R.; Corison, Cynthia; Mukhoti, Bela; Hecht, Gregory B.  
**Cc:** Czochor, Ronald; Whittinghill, Dexter C.; Lacke, Christopher J.  
**Subject:** request for letter of consultation

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Thanks very much for your help.

Chris

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(856) 256-4816 (fax)

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**ROWAN UNIVERSITY SENATE**  
COLLEGE CURRICULUM COMMITTEE WORKSHEET

<b>PART I: INFORMATION</b>								
COLLEGE NAME (circle one)	BUS	COM	ED	ENG	FPA	LAS-HUM	LAS-M/S <b>X</b>	LAS-SBS
Date of Hearing	<b>3 March 2006</b>							
Type of Hearing (circle one)	OPEN <b>X</b>	CLOSED						
SCC Proposal #	05 – 06 – 840							
Proposal Title	<b>Major Change to the Statistics Concentration</b>							
Sponsor(s) in Attendance	Lacke, Wittinghill							
<b>PART II: COMMON PROBLEMS REVIEWED</b>						<b>Sponsor's Initials</b>	<b>College Chairperson's Initials</b>	
Consultation letters attached							DRK	
Library form completed by librarian (not sponsor)							N/A	
Prerequisites consistent (initial page and catalog description)							N/A	
Course title consistent throughout proposal							DRK	
Catalog description – on separate page – complete with HEGIS, credits, and prereqs (with HEGIS)							N/A	
All courses throughout proposal identified with correct title and HEGIS numbers							DRK	

**PART III: COMMITTEE DECISION**

- Pass with NO CHANGES
- Passed – Return to Sponsor for MINOR CHANGES
- Tabled w/SUGGESTED MINOR CHANGES
- NOT APPROVED

HEARING SUMMARY:

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To: Christopher Lacke, Department of Mathematics  
From: Keiko Stoeckig, Chairperson, Psychology Department  
Date: February 3, 2006  
Re: proposal for changes to the Concentration in Statistics

The Psychology Department has been informed of the proposal to remove two Psychology courses (Statistics and Research Methods in Psychology I, 2007.311, and Statistics and Research Methods in Psychology II, 2007.312) from the list of courses fulfilling the core course requirements for the Statistics concentration. The Psychology Department is in full support of this proposed change.

Since the Statistics concentration was originally developed, the Psychology major curriculum requirements have been changed. Statistics and Research Methods in Psychology I and Statistics and Research Methods in Psychology II are no longer part of the Psychology major requirements, so we have not offered these two courses for several years. Therefore, it makes no sense to continue to include these courses in the Statistics concentration.

Additionally, the original intent for including these two Psychology courses was to afford Psychology majors the opportunity to easily complete a Statistics concentration. Although, in principle, there is great value to this, in reality there has been little to no demand for a Statistics concentration among our Psychology majors. (Moreover, Psychology majors who might wish to pursue a Statistics concentration in the future would have no real difficulty completing the new requirements as stated in the proposal.)

Thank you for the opportunity to review your proposal for changes to the Statistics Concentration. If you require additional information, please feel free to contact me at x4821 or [stoeckig@rowan.edu](mailto:stoeckig@rowan.edu).