WINONA STATE UNIVERSITY
REQUIRED CHECKLIST FOR ALL CURRICULAR PROPOSALS

This checklist enables A2C2 representatives to endorse that their departments have accurately followed the Process for Accomplishing Curricular Change. For each course or program proposal submitted to A2C2, this checklist must be completed, signed by the submitting department’s A2C2 representative, and included with the proposal when forwarded for approval. Peer review of proposals is also strongly advised, e.g., departments should discuss and vote on the proposals as submitted to A2C2, rather than on just the ideas proposed or drafts of proposals.

If a proposal fails to follow or complete any aspect of the process, the Course and Program Proposal Subcommittee will postpone consideration of the proposal and return it to the department’s A2C2 representative for completion and resubmission. Resubmitted proposals have the same status as newly submitted proposals.

Note: This form need not be completed for notifications.

1. The appropriate forms and the “Approval Form” have been completed in full for this proposal. All necessary or relevant descriptions, rationales, and notifications have been provided.
   - [ ] Completed

2a. The “Financial and Staffing Data Sheet” has been completed and is enclosed in this proposal, if applicable.
   - [ ] Completed

2b. For departments that have claimed that “existing staff” would be teaching the course proposed, an explanation has been enclosed in this proposal as to how existing staff will do this, e.g., what enrollment limits can be accommodated by existing staff. If no such explanation is enclosed, the department’s representative is prepared to address A2C2’s questions on this matter.
   - [ ] Completed

3. Arrangements have been made so that a department representative knowledgeable of this proposal will be attending both the Course and Program Proposal Subcommittee meeting and the full A2C2 meeting at which this proposal is considered.
   - [ ] Completed
   
   Name and office phone number of proposal’s representative: [handwritten]

4. Reasonable attempts have been made to notify and reach agreements with all university units affected by this proposal. Units still opposing a proposal must submit their objections in writing before or during the Course and Program Proposal Subcommittee meeting at which this proposal is considered.
   - [ ] Completed

5. The course name and number is listed for each prerequisite involved in this proposal.
   - [ ] Completed

6. In this proposal for a new or revised program (major, minor, concentration, etc.), the list of prerequisites provided includes all the prerequisites of any proposed prerequisites. All such prerequisites of prerequisites are included in the total credit hour calculations.
   - [ ] Completed

7. In this proposal for a new or revised program, the following information for each required or elective course is provided:
   a. The course name and number.
   b. A brief course description.
   c. A brief statement explaining why the program should include the course.
   - [ ] Completed

8. This course or program revision proposal:
   a. Clearly identifies each proposed change.
   b. Displays the current requirements next to the proposed new requirements, for clear, easy comparison.
   - [ ] Completed

9. This course proposal provides publication dates for all works listed as course textbooks or references using a standard form of citation. Accessibility of the cited publications for use in this proposed course has been confirmed.
   - [ ] Completed

Department’s A2C2 Representative or Alternate [handwritten]

Date 2/24/10

[Revised 9-05]
WINONA STATE UNIVERSITY
PROPOSAL FOR NEW COURSES

Department: Math & Statistics
Date: Feb, 24th 2010

Refer to Regulation 3-4, Policy for Changing the Curriculum, for complete information on submitting proposals for curricular changes.

STAT 301
Course No.

Introductory Statistics for Health Sciences
Course Title 3

Credits

This proposal is for a(n) _X_ Undergraduate Course
_____ Graduate Course

Applies to: _Major_ 
_____ Minor 
_____ University Studies*
_____ Not for USP

_____ Required 
_____ Elective 
_____ Required 
_____ Elective 

Prerequisites _____ qualification by math placement exam or associate degree in nursing

Grading method _X_ Grade only 
_____ P/NC only 
_____ Grade and P/NC Option

Frequency of offering ___1 section every fall semester_

*For University Studies Program course approval, the form Proposal for University Studies Courses must also be completed and submitted according to the instructions on that form.

Provide the following information:

A. Course Description

1. Catalog description:
   An introductory course of statistical applications to the health sciences. Descriptive statistics, sampling, techniques of estimation, and hypothesis testing are included. The understanding of statistical applications as presented in health science research will be emphasized. Prerequisite: qualification by math placement exam or associate degree in nursing.

2. Course outline of the major topics and subtopics (minimum of two-level outline).

I. Introductory terms and methods of data collection
   a. Data types
   b. Surveys
   c. Experiments
   d. Observational studies

II. Descriptive statistics,
   a. Numerical and graphical summaries for categorical data
   b. Numerical and graphical summaries for numeric data

III. Introduction to probability
   a. Role of probability in decision making
   b. Conditional probability
   a. Relative risk and odds ratios

IV. Sampling distributions
   a. Central limit theorem
   b. Standard error

V. Confidence interval estimation
   a. Means
   b. Proportions
   c. Relative risk and odds ratios
VI. The logic and applications of hypothesis testing
   a. Means
   b. Proportions
   c. Nonparametric tests

VII. Contingency table analysis
   a. 2x2 tables
   b. R X C tables

VIII. Regression analysis
   a. Correlation
   b. Linear regression
   c. Logistic regression

IX. Introduction to Analysis of Variance
   a. Completely randomized design
   b. Blocking and repeated measures
   c. Multiple comparison procedures

X. Review of Journal papers to reinforce statistical concepts (throughout the course)

3.a. Instructional delivery methods utilized: (Please check all that apply).

<table>
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<tr>
<th>Lecture: Auditorium</th>
<th>ITV</th>
<th>Online</th>
<th>Web Enhanced</th>
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<td>Service Learning</td>
<td>Travel Study</td>
<td>Laboratory</td>
<td>Internship/Practicum</td>
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<td>Other: (Please indicate)</td>
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3.b. MNSCU Course media codes: (Please check all that apply).

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<tr>
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<th>4. ITV Sending</th>
<th>7. Taped</th>
<th>10. Web Supplemented</th>
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</thead>
<tbody>
<tr>
<td>1. CD Rom</td>
<td>5. Broadest TV</td>
<td>8. ITV Receiving</td>
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<td></td>
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</tbody>
</table>

4. Course requirements (papers, lab work, projects, etc.) and means of evaluation.
   Project - Review of a journal paper to assess statistical validity
   Evaluation - examinations, quizzes, computer assignments, homework problems, and a final
   examination.

5. Course materials (textbook(s), articles, etc.).

6. Assessment of Outcomes – by examination and grading of a summative project

7. List of references:
   (this is an example of a research paper used in the course)

B. Rationale

1. Statement of the major focus and objectives of the course.

The major focus is of this course is for students in various health sciences fields to be able to apply statistical thinking to studies reported in journals and to their own investigations that generate data. Students who successfully complete this course will be able to:
• Assess validity of data reported in the news and in journals of your field of interest.
• Collect the right data to answer a question or test a research hypothesis.
• Apply the best testing methods to collected data for the purpose of gaining information and making inferences.
• Interpret the results of statistical tests, including computer reports.

2. Specify how this new course contributes to the departmental curriculum.

   The WSU Math & Statistics department is trying to once again design a course that particularly serves students on the Rochester campus that major in a health sciences field. “2+2” students in Rochester have been underserved regarding options for WSU statistics courses. There is also a long range plan for offering this course on the Winona campus to better meet the needs of the nursing and other health related programs.

3. Indicate any course(s) which may be dropped if this course is approved.

   No course will be dropped, but this course in a way replaces a section of STAT 110 that was offered in Rochester through 2007.

C. Impact of this Course on other Departments, Programs, Majors, or Minors

1. Does this course increase or decrease the total credits required by a major or minor of any other department?

   NO

   If so, which department(s)? None

2. Attach letter(s) of understanding from impacted department(s).

Attach a Financial and Staffing Data Sheet.

Attach an Approval Form with appropriate signatures.

Department Contact Persons for this Proposal:

Daniel Rand
Name (please print) Phone e-mail address
457-5655 drand@winona.edu

Brant Deppa
Name (please print) Phone e-mail address
457-5457 bdeppa@winona.edu

[Revised 7/5/07]
WINONA STATE UNIVERSITY
FINANCIAL AND STAFFING DATA SHEET

Course or Program: STAT 301 – Introductory Statistics for the Health Sciences
Include a Financial and Staffing Data Sheet with any proposal for a new course, new program, or revised program.

Please answer the following questions completely. Provide supporting data.

1. Would this course or program be taught with existing staff or with new or additional staff? If this course would be taught by adjunct faculty, include a rationale.

STAT 301 would be taught with existing staff.

2. What impact would approval of this course/program have on current course offerings? Please discuss number of sections of current offerings, dropping of courses, etc.

No real impact. STAT 301 was taught by Daniel Rand in fall, 2009 as a one-time offering (pilot) as part of his regular load. 17 students enrolled and passed STAT 301:

- 1 Computer Science (bioinformatics) major
- 1 Psychology major
- 2 Social Work majors
- 13 Nursing majors

Past enrollments for STAT 110 in Rochester were:

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<tr>
<th>STAT 110</th>
<th>Rochester students</th>
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<tr>
<td>Fall 04</td>
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<td>Spr 05</td>
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<td>Fall 05</td>
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<td>Fall 06</td>
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<td>Spr 07</td>
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<tr>
<td>Fall 07</td>
<td>18-9 fail or withdrew</td>
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<tr>
<td>Summ 08</td>
<td>18</td>
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3. What effect would approval of this course/program have on the department supplies? Include data to support expenditures for staffing, equipment, supplies, instructional resources, etc.

None. The primary instructor is assigned to Winona but lives in Rochester, so there is no additional travel expense incurred to get an instructor to Rochester. As this course has been offered previously as a pilot and before that as STAT 110 it does not represent an increase in course offerings.

[Revised 9-05]
WINONA STATE UNIVERSITY
NEW AND REVISED COURSE AND PROGRAM APPROVAL FORM

Routing form for new and revised courses and programs.

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<tr>
<th>Department Recommendation</th>
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<td>e-mail address</td>
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<tr>
<th>Dean’s Recommendation</th>
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<tbody>
<tr>
<td>Approved</td>
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<tr>
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<th>Graduate Council Recommendation (if applicable)</th>
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Please forward to Registrar.

Registrar Date entered

Please notify department chair via e-mail that curricular change has been recorded.

[Revised 7-5-07]