**Purdue Northwest Curriculum Document Coversheet**

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| **Document No:**(According to [Instruction](http://faculty.pnw.edu/blog/curriculum-document-approval-procedures/)s[[1]](#footnote-1)) | CES 18-12 NEW PROG STAT | **Approval by Faculty Senate:** (Leave Blank) | 3/8/2019 |
| **Proposed Effective Date**  | Fall 2019 | **Date Reviewed by Senate Curriculum****Committee:** (Leave blank) | 2/22/2019 |
| **Submitting Department:**(Name of both Dept & College/School ) | MSCS/CES | **Name(s) of Library Staff Consulted:** (NA if not required) | N/A |
| **Date Reviewed by Department**  | 11/16/18 |  |  |
| **Submission Date:**(Date sent to College/School Curr Comm after Dept Review) | 11/20/18 | **Will New Library****Resources Used?** | [ ]  **Yes**[x]  **No** Double-click to check Yes / No. |
| **Date Reviewed by College/School Curriculum Committee**  | 12/14/18 | **Form 40 Needed?**(Double-click one box.)Registrar will complete Form 40 **after** Senate approval of document. | [x]  **Yes** New courses or any course change, check **YES**[ ]  **No** For **all other** curriculum matters, check **NO**. |
| **Contact Person(s):**(Name & Title) | Dr. Jonathan Kuhn, Associate Professor of Statistics; Dr. Catherine Murphy, Head, MSCS |  |  |

Unless marked “Leave blank” all parts of this form must be filled in **before** sending to Secretary of the Faculty Senate.

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| **Task (check all that apply and fill out sections appropriate for each change).** [ ]  Program/Concentration Change or New Program/Concentration Proposal: Complete Section I, III, & IV[ ]  Minor Change or New Minor Proposal: Complete Section I (delete sections III & IV)[ ]  Certificate Change or New Certificate Proposal: Complete Section I (delete sections III & IV)[x]  Course Change or New Course Proposal: Complete Section II (delete sections III & IV) |
| **Program name**.Bachelor of Science in Applied Statistics |
| **Degree name(s).** (If applicable.)Bachelor of Science in Applied Statistics |

**Section II: This section is for changes in courses only**

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| **Subject.** Design of Experiments (new course): study of different data analysis techniques which test hypothesized relationships between independent and dependent variables in various circumstances where the independent variables are typically categorical and the dependent variables are continuous.  |
| **Justification.** Design of Experiments is useful in for example the natural sciences, particularly biology and ecology, the social sciences, engineering, marketing and policy making. Applied Statistician, Biostatistician, Environmental Statistician, Research Biostatistician are examples of positions which would use design of experiments. This course, along with Probability and Statistics II, is the last of the first-level introductory courses, before entering the second-level advanced applied statistics in the statistics program. This course is a natural follow up to STAT 43000 Applied Statistics (a course currently taught as part of the statistics minor): instead of the continuous variables considered in STAT 43000, categorical variables are considered in this course.  |

Use the **Current** and **Proposed** spaces below for course changes only. Otherwise, mark “N/A”

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| **Current:** (Course changes: include entire present catalog information. Leave blank if new course)N/A | **Proposed:** (Course changes: include entire new catalog information.)

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| **STAT 43100 – Design of Experiments** Credit Hours: 3.00. Thorough applied course in design of experiments including experience with statistical software. Topics include completely randomized, factorial designs, randomized block designs, and designs to study variances; fractional factorial, incomplete and confounded block, split-plot and crossover and repeated measures designs.Requires previous calculus-based courses in probability and statistics, and applied linear models. Typically offered Fall, Spring.**Levels:** Graduate, Professional, Undergraduate **Schedule Types:** classroom, hybrid, online **Prerequisite: minimum grade of C from STAT 43000** |

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| **Is this course also:** | [ ]  **General Education** | **Currently Designated ExL (see** [**instructions[[2]](#footnote-2)**](http://faculty.pnw.edu/blog/curriculum-document-approval-procedures/)**)** [ ]  |

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| **Course Objectives / Learning Outcomes.** (New courses only. List main outcomes. If lengthy, attach separate page.)1. Distinguish completely randomized, factorial, and randomized block designs
2. Analyze designs to study variance
3. Identify the appropriate design for a dataset
4. Clearly communicate results

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| **Impact on Students.** (State “N/A” if proposal will not greatly affect students.) |
| **Impact on University Resources.** (State “N/A” if proposal will not require new resources, faculty or funds.) |
| **Impact on other Academic Units.** (State “N/A” if proposal will not affect other units.) (Include name of person in affected area this was discussed with.) |

(Boxes will expand and spill over onto next page to accommodate your typing.)

1. <http://faculty.pnw.edu/blog/curriculum-document-approval-procedures/> [↑](#footnote-ref-1)
2. <http://faculty.pnw.edu/blog/curriculum-document-approval-procedures/> [↑](#footnote-ref-2)