

YOUR NAME: (TOTALLY OPTIONAL): Decide later

THE COURSE:

Consider a new pre-statistics bridging course – a course taken before the first course on statistical inference. This bridging course excludes hypothesis tests, confidence intervals, sampling distributions and the binomial distribution.

This statistical literacy course covers descriptive statistics and statistical modeling. The focus is on statistical association, probabilistic causation and their relationship.

The purpose of this survey is to identify the content for this course – not the pedagogy or the technical tools involved. This course is currently taught at Augsburg College as GST 200.

EVALUATION:

Given these goals for this course, evaluate the importance of the various areas/topics as follows:

✓✓	Double check	Extremely important Conceptually critical.
✓	Single check	Quite important: Fundamental, useful, and important. Good building block.
—	Leave Blank	May be important: Elective topic
✗	Single x:	Somewhat unimportant. Should probably be omitted.
✗✗	Double “x”	Do not include. Not relevant, useful, valuable or intelligible at this level.
?	Question mark	Topic is unfamiliar, ambiguous, or incoherent to the reviewer.

THE RESULTS

Please return to Milo Schield

1. In person
2. by mail: Dept of Business Administration, Augsburg College, 2211 Riverside Drive, Mpls. MN 55454)
3. by fax: 612:330-1607

Add any topics that you think should have been included:

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| <p>1. _____ Philosophy of Science</p> <p>2. _____ inference: generalize, predict, etc.</p> <p>3. _____ association vs. causation</p> <p>4. _____ causes: determinate vs. probabilistic</p> <p>5. _____ common cause (lurking variable)</p> <p>6. _____ fishbone (causal) diagrams</p> <p>7. _____ Foundations of statistics</p> <p>8. _____ experiment vs. observational study</p> <p>9. _____ natural experiments</p> <p>10. _____ study: cross-sectional / longitudinal</p> <p>11. _____ study: prospective vs. retrospective</p> <p>12. _____ control group (controlled study)</p> <p>13. _____ control for (take account of)</p> <p>14. _____ matching, test-retest</p> <p>15. _____ placebo and placebo effect</p> <p>16. _____ Hawthorne & halo effects.</p> <p>17. _____ single and double blind studies.</p> <p>18. _____ random assignment</p> <p>19. _____ population vs. sample</p> <p>20. _____ parameter vs. statistic</p> <p>21. _____ random error (sampling error)</p> <p>22. _____ bias : measurement error, etc.</p> <p>23. _____ confounding: spurious association</p> <p>24. _____ representative sampling/sample</p> <p>25. _____ random sampling/sample</p> <p>26. _____ data types: quality vs. quantity</p> <p>27. _____ constructs (psych., sociology, etc.)</p> <p>28. _____ reliability versus validity</p> <p>29. _____ Reading count-based data</p> <p>30. _____ exclusive and exhaustive</p> <p>31. _____ intersection and union</p> <p>32. _____ forming comparisons</p> <p>33. _____ reading & comparing counts</p> <p>34. _____ describing part-whole percents</p> <p>35. _____ creating percents from counts</p> <p>36. _____ comparing percentages</p> <p>37. _____ risk and relative risk</p> <p>38. _____ odds and odds ratio</p> <p>39. _____ reading & comparing rates</p> <p>40. _____ Interpret rates, percents counts</p> <p>41. _____ risk as a measure of association</p> <p>42. _____ percentage attributable to</p> <p>43. _____ Simpson's paradox; ecological fallacy</p> <p>44. _____ Bayes Rule and medical tests</p> <p>45. _____ prosecutor's fallacy</p> <p>46. _____ R^2 of medical tests, two-pop. rates, etc.</p> | <p>47. _____ Read/interpret quantitative data</p> <p>48. _____ frequency distribution</p> <p>49. _____ bar charts, histograms</p> <p>50. _____ shape: symmetric/asymmetric/skew</p> <p>51. _____ percentiles: calculate/compare</p> <p>52. _____ mean and median</p> <p>53. _____ mode and mid-range</p> <p>54. _____ mid-interquartile range</p> <p>55. _____ geometric mean</p> <p>56. _____ minimum, maximum and range</p> <p>57. _____ mean absolute deviation</p> <p>58. _____ variance</p> <p>59. _____ standard deviation</p> <p>60. _____ coefficient of variation: Std.Dev / Mean</p> <p>61. _____ inter-quartile range (IQR)</p> <p>62. _____ skewness: $3 * (\text{mean} - \text{median}) / \text{stdev.}$</p> <p>63. _____ standard deviation of binary data</p> <p>64. _____ outlier and trimmed mean</p> <p>65. _____ normalizing (z scores)</p> <p>66. _____ standardizing to a new mean/SD</p> <p>67. _____ bell-shaped distribution: 1/2/3 rule</p> <p>68. _____ prediction interval</p> <p>69. _____ median overlap</p> <p>70. _____ Algebraic models/R^2: balanced/unbal.</p> <p>71. _____ Normal distribution</p> <p>72. _____ Log-normal & exponential</p> <p>73. _____ Plots: quantile & quantile-normal</p> <p>74. _____ Simple least-squares regression</p> <p>75. _____ correlation</p> <p>76. _____ slope of regression</p> <p>77. _____ $b = r * (s_y / s_x)$</p> <p>78. _____ $s_y\text{-hat} = s_y * \sqrt{1 - r^2}$</p> <p>79. _____ Prediction and prediction interval</p> <p>80. _____ R^2 (explanatory power of a model)</p> <p>81. _____ regression to the mean (test/retest)</p> <p>82. _____ Multivariate Analysis (& Misc)</p> <p>83. _____ partial correlation & partial slope</p> <p>84. _____ stepwise least-squares regression</p> <p>85. _____ logistic regression</p> <p>86. _____ Plot chance vs Z: 2 factors (Bell Curve)</p> <p>87. _____ cluster analysis</p> <p>88. _____ discriminant analysis</p> <p>89. _____ quality/reliability analysis</p> <p>90. _____ read/interpret longitudinal graphs</p> <p>91. _____ read/interpret cross-sectional graphs</p> <p>92. _____ read/interpret essays involving statistics</p> |
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