# Assessment Plan
# ISU Department of Politics and Government
# Graduate Program

## 1. Goals

The Department of Politics and Government at Illinois State University offers a master's degree in Political Science in order to promote knowledge and skills in the areas of scholarship, teaching, and service in and about political life.

## 2. Student Learning Outcomes

The Department has five learning outcomes for its graduate program:

1. Apply critical thinking to understand and evaluate political ideas, institutions and processes at the local, national, and global levels, and express that analysis both in writing and orally, using a diversity of research methodologies.

2. Articulate their views on a variety of political concerns in a context of respect for academic principles and tolerance for dissenting views.

3. Identify normative issues and make informed and well-reasoned judgments in complex environments.

4. Recognize and explain the dimensions of the significant events, ideas, individuals, social movements, and institutions that have shaped our world.

5. Formulate a critically informed position on participation and citizenship in local, national, and global communities.

The Department periodically drafts a curriculum map to assess how these learning outcomes align with its courses (see Appendix A). Moreover, the graduate learning outcomes are identical to the undergraduate learning outcomes, but the expected performance of students to meet all learning outcomes is more advanced in the graduate program, and, for Learning Outcome 1, the expectation is the creation of novel research in a thesis or more advanced mastery of the academic literature and/or research methods.

## 3. Direct evidence of student learning

The current assessment plan for the graduate political science program of the Department of Politics and Government includes:

A. Exams and/or pretests and/or posttests intended to measure student knowledge at the start of a course and student learning within a course, in the Department's POL 497 Introduction to Research Methodology course. See Appendix B for a final exam from this course.

B. Student work on assignments and papers. For example, The Department Chair and the Director of Assessment team-teach the Department's POL 497 Introduction to Research Methodology course and assess students on completion of assignments and a quantitative research paper. See Appendix C for a sample assignment.

C. Measures of pass/fail rates for comprehensive examinations.

D. Assessment of student competency in passing of a thesis proposal.

E. Data on master's thesis completion.

F. Data on capstone project completion.

G. Data on graduation from the master's program.

## 4. Indirect evidence of student learning

The current assessment plan for the graduate political science program of the Department of Politics and Government includes:

A. An annual survey of graduate students across selected courses, measuring phenomena such as student perceptions of the Department and student perceptions of how well Politics and Government courses improved the student's ability in certain domains. See Appendix D for a sample graduate survey.

B. An annual focus group of graduate students to provide richer data on student perceptions of the Department. For the focus group, a graduate student leader reads planned prompts with the potential for the graduate student leader to ask off-the-cuff follow-ups. Student responses from the focus group are then transcribed. See Appendix E for sample focus group prompts.

C. The Department receives information on the performance of students in the Applied Community and Economic Development (ACED) program, from representatives of the Stevenson Center and field experience supervisors.

## 5. Use of the results

Each semester, the Department's Director of Graduate Studies presents information to the Department Chair regarding student performance and learning in the graduate program. Additionally, each academic year at or after the Spring semester, the Department's Director of Assessment presents the Department Chair a summary assessment report. Decisions are made intermittently and on an on-going basis regarding changes based on results from these assessment practices.

One major recent revision to the graduate program that was based on student feedback involved the creation of a new course: POL 496 "Introduction to Political Inquiry". This course was added in Fall 2018 as an introduction to the political science discipline and to the graduate program, and is required for entering graduate students. Moreover, POL 496 has been revised extensively in each subsequent iteration based on student responses in evaluations and in consultation with faculty instructors, including substantial changes to course content, and a transition from a team-teaching approach to assignment of a single designated professor.

**APPENDIX A**
**Selected results from the 2019 Department curriculum map**

Numbers indicate the percentage of the 15 graduate courses included in the curriculum mapping exercise. "LO" indicates a learning outcome.

| | LO1 | LO2 | LO3 | LO4 | LO5 |
|---|---|---|---|---|---|
| Graduate | | | | | |
| Fully met | 93% | 80% | 80% | 67% | 53% |
| Partially met | 7% | 7% | 13% | 27% | 27% |
| Not met | 0% | 13% | 7% | 7% | 20% |

LO1 Apply critical thinking to understand and evaluate political ideas, institutions and processes at the local, national, and global levels, and express that analysis both in writing and orally, using a diversity of research methodologies.

LO2 Articulate their views on a variety of political concerns in a context of respect for academic principles and tolerance for dissenting views.

LO3 Identify normative issues and make informed and well-reasoned judgments in complex environments.

LO4 Recognize and explain the dimensions of the significant events, ideas, individuals, social movements, and institutions that have shaped our world.

LO5 Formulate a critically informed position on participation and citizenship in local, national, and global communities.

| Course | | LO 1 | LO 2 | LO 3 | LO 4 | LO 5 |
|---|---|---|---|---|---|---|
| 411 | Seminar in American politics | F | F | F | F | F |
| 412 | Topics in American politics | F | F | F | P | P |
| 417 | Political cultures | F | F | F | F | N |
| 421 | Seminar in state and local politics | -- | -- | -- | -- | -- |
| 422 | Seminar in urban politics | -- | -- | -- | -- | -- |
| 431 | Seminar in public administration | F | F | F | P | P |
| 432 | Seminar in judicial politics | P | N | P | P | N |
| 433 | Topics in public administration | | | | | |
| 441 | Seminar in comparative politics | F | F | F | F | F |
| 442 | Topics in comparative politics | F | F | F | F | P |
| 451 | Seminar in international relations | F | F | F | F | F |
| 452 | Topics in international relations | F | F | F | F | F |
| 461 | Seminar in political theory | F | F | F | F | F |
| 463 | Seminar in democratic theory | F | F | F | F | F |
| 470 | Seminar in community development | -- | -- | -- | -- | -- |
| 477 | Community project design and management | -- | -- | -- | -- | -- |
| 478 | Topics in administration and planning | -- | -- | -- | -- | -- |
| 490 | Readings in political science | -- | -- | -- | -- | -- |
| 490a01 | Democracy and human rights in Peru | -- | -- | -- | -- | -- |
| 491 | Internship in college teaching in political science | -- | -- | -- | -- | -- |
| 495 | Graduate research in applied community development | -- | -- | -- | -- | -- |
| 496 | Introduction to political inquiry | F | P | P | P | P |
| 497 | Introduction to research methodology | F | N | N | N | N |
| 498 | Professional practice | F | F | F | F | F |
| 498a11 | Professional practice: Public service | F | F | F | F | F |
| 498a12 | Professional practice: Community development | -- | -- | -- | -- | -- |
| 498a15 | Professional practice: Stevenson Center assistantship | -- | -- | -- | -- | -- |
| 499 | Master's thesis | -- | -- | -- | -- | -- |
| 499A90 | Independent research for the master's thesis final term | -- | -- | -- | -- | -- |

**APPENDIX B**
**POL 497 Introduction to Research Methodology**
**Final Exam**

*<u>Instructions for the final exam</u>: In completing this exam, you may use notes and other sources, but you may NOT work with others. You may ask your instructors questions for clarification. Unless otherwise indicated, each multiple-choice item has one correct response. Will be graded as the percentage of items correct. Feel free to submit as a scan of a hard copy, a PDF, or a Word file.*

***Please sign below (hard copy or electronically) to indicate that you did not work with others on this exam other than to ask clarification questions of an instructor.***

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## STATISTICAL CONTROL

1. Explain the benefit of using control variables in a correlational study.

## EXPERIMENTS

2. Explain the benefit of randomly assigning participants to groups in an experiment.

3. List the two reasons why responses from participants in a control group might differ from responses from participants in a treatment group, if an experiment were correctly conducted.

## P-VALUES

4. If we flipped a coin 10 times and got 5 heads and 5 tails, what would be the p-value for a statistical test of the null hypothesis that the coin is fair?
   - ☐ 0
   - ☐ 1
   - ☐ something between 0 and 1

5. If we flipped a coin 10 times and got 10 heads and 0 tails, what would be the p-value for a statistical test of the null hypothesis that the coin is fair?
   - ☐ 0
   - ☐ 1
   - ☐ something between 0 and 1

6. Which p-value below would indicate the weakest evidence against a null hypothesis that a coin is fair?
   - ☐ p=0.05
   - ☐ p=0.50
   - ☐ p=1.00

7. If the p-value from a single statistical test of a null hypothesis is p=0.0001, do we have enough evidence to claim that the detected association is large?
   A. Yes
   B. No

8. Of the following, which is the best description of what a p-value measures?
   - ☐ the precision of an estimate
   - ☐ the size of an association controlling for other model factors
   - ☐ the strength of a causal relationship
   - ☐ the strength of evidence against the null hypothesis
   - ☐ the strength of evidence in favor of the null hypothesis

9. Researcher A flips a coin a certain number of times, and the coin lands on heads 40% of the time; based on these flips by Researcher A, Researcher A then calculates a p-value for a test of the null hypothesis that the coin is fair. Researcher B flips the same coin a certain number of times, and the coin lands on heads 60% of the time; based on these flips by Researcher B, Researcher B then calculates a p-value for a test of the null hypothesis that the coin is fair. What is anything is known about the respective p-values?
   - ☐ Researcher A's p-value is lower than Researcher B's p-value.
   - ☐ Researcher A's p-value is higher than Researcher B's p-value.
   - ☐ Researcher A's p-value is the same as Researcher B's p-value.
   - ☐ It is not possible to know without more information which researcher has the lower p-value.

10. Calculate the p-value for a test of the null hypothesis that a coin is fair for a coin that lands on heads 0 times in 5 flips. Report the p-value as a fraction.

**STATISTICAL SIGNIFICANCE**

11. The term "statistically significant evidence" refers to ___.
   - ☐ sufficient evidence that a particular association is large
   - ☐ sufficient evidence that a particular association is important
   - ☐ sufficient evidence that a particular association exists

**HYPOTHESIS TESTING**

12. For a null hypothesis of no difference, if the p-value for the test of the hypothesis is p=0.99, we should ___.
   - ☐ accept the null hypothesis and accept the alternative hypothesis
   - ☐ reject the null hypothesis and reject the alternative hypothesis
   - ☐ accept the null hypothesis and reject the alternative hypothesis
   - ☐ reject the null hypothesis and accept the alternative hypothesis
   - ☐ none of the above

13. For a null hypothesis of no difference, if the p-value for the test of the hypothesis is p=0.01, we should ___.
    - ☐ accept the null hypothesis and accept the alternative hypothesis
    - ☐ reject the null hypothesis and reject the alternative hypothesis
    - ☐ accept the null hypothesis and reject the alternative hypothesis
    - ☐ reject the null hypothesis and accept the alternative hypothesis
    - ☐ none of the above

**STANDARD ERRORS**

14. Of the following, which is the best description of what the standard error indicates?
    - ☐ the precision of an estimate
    - ☐ the strength of a causal relationship
    - ☐ the strength of evidence against the null hypothesis
    - ☐ the strength of evidence in favor of the null hypothesis
    - ☐ the size of an association controlling for other model factors

15. All else equal, as the number of measurements increases, the standard error for that set of measurements ___.
    - ☐ decreases
    - ☐ increases
    - ☐ remains the same

16. All else equal, as the standard deviation of a set of measurements decreases, the standard error for that set of measurements ___.
    - ☐ decreases
    - ☐ increases
    - ☐ remains the same

**CONFIDENCE INTERVALS**

17. Which one of the following would be thinner, all else equal, for the mean of a set of measurements?
    - ☐ the 95% confidence interval
    - ☐ the 99% confidence interval

18. All else equal, as the standard deviation of a set of measurements increases, the 95% confidence interval for the mean of the measurements ___.
    - ☐ gets thinner
    - ☐ gets wider
    - ☐ remains the same width

**Z-SCORES**

19. Suppose that the mean weight in a population is 170 pounds and that the standard deviation of weight in that population is 5 pounds; suppose also that weights in this population follow a normal distribution. Candidate X is 180 pounds. What is the z-score that is associated with Candidate X's weight in that population?
    - ☐ -10
    - ☐ -1
    - ☐ 1
    - ☐ 10
    - ☐ None of the above

20. Suppose that the mean height in a population is 170 cm and that the standard deviation of height in that population is 10 cm; suppose also that heights in this population follow a normal distribution. Regarding height in this population, a candidate who is 160 cm tall would be in which of the following ranges?
    - ☐ less than the 2.5th percentile
    - ☐ between the 2.5th percentile and the 97.5th percentile
    - ☐ greater than the 97.5th percentile

## T-STATISTICS

21. Which one of these t-statistics would have the lowest associated p-value, all else equal?
    - ☐ -12
    - ☐ -5
    - ☐ 0
    - ☐ 2
    - ☐ 10

22. In a given sample of 10 persons, the mean support for the president is 56 with a standard deviation of 6. Report the t-statistic to one decimal place for the test of the null hypothesis that this mean differs from 50.

$$t = \frac{\text{sample mean} - \text{comparison number}}{\left(\frac{\text{sample standard deviation}}{\sqrt{\text{sample size}}}\right)}$$

23. In an experiment, the control group had 25 participants, and the mean response was 50, with a standard deviation of 10; the treatment group had 36 participants, and the mean response was 70, with a standard deviation of 16. Report the t-statistic to one decimal place for a test of the null hypothesis that the control mean equals the treatment mean.

$$\text{t} = \frac{\text{sample 1 mean} - \text{sample 2 mean}}{\sqrt{\frac{(\text{sample 1 std dev})^2}{\text{sample size 1}} + \frac{(\text{sample 2 std dev})^2}{\text{sample size 2}}}}$$

## STATISTICAL POWER

24. All else equal, the smaller the association that a study is testing for, the ___.
    - ☐ lower statistical power is
    - ☐ higher statistical power is

25. All else equal, the larger the sample size, the ___.
    - ☐ lower statistical power is
    - ☐ higher statistical power is

26. All else equal, the larger the variation in a measurement, the ___.
    - ☐ lower statistical power is
    - ☐ higher statistical power is

## RELIABILITY AND VALIDITY

27. Suppose that a sufficiently large set of participants completes a set of political knowledge items and then immediately completes a set of items measuring support for Candidate X. The correlation between the participants' mean score on the political knowledge items and the participants' mean score on the items measuring support for Candidate X was 0.01. Which of the following, if any, could be properly inferred?
    - ☐ The measure of political knowledge is not reliable.
    - ☐ The measure of support for Candidate X is not reliable.
    - ☐ All of the above
    - ☐ None of the above

28. Suppose that a sufficiently large set of students takes a political knowledge test twice in immediate succession. If the correlation between the students' first test score and the students' second test score is 0.01, that correlation is good evidence that this new IQ test has ___.
    - ☐ high validity
    - ☐ high reliability
    - ☐ all of the above
    - ☐ none of the above

29. Suppose that a sufficiently large set of students takes a political knowledge test twice in immediate succession. If the correlation between the students' first test score and the students' second test score is 0.99, that correlation is good evidence that this new IQ test has ___.
    - ☐ high validity
    - ☐ high reliability
    - ☐ all of the above
    - ☐ none of the above

30. Researcher A conducted a randomized experiment with a sample of college students, in which the participants rated a resume; the experimental manipulation was that the name on the resume was randomly assigned to be "Jamal Washington" or "Brad Anderson". For making inferences about hiring bias in the real world, this study has a high degree of ___.
    - ☐ internal validity
    - ☐ external validity
    - ☐ both of the above
    - ☐ neither of the above

31. Explain your response for the prior item.

**WEIGHTING**

32. Explain why survey data might need to be weighted.

33. If Asians are 3% of a sample and 6% of a population, what weight should be applied to each Asian in the sample, if weighting on only race?

**INFERENCES**

34. Suppose that you give participants a 100-item political knowledge multiple-choice test. The test has a mix of easy items, medium-difficulty items, and difficult items, and the difficulty of the items is unrelated to the order that the items appear on the test (for example, difficult items are just as likely to appear early in the test as they are to appear later in the test). Each item has five possible response options, labeled A, B, C, D, or E. The mean percentage correct on the test is 50% with a standard deviation of 10%.

    Suppose that the top 25 participants on the first 50 items earned a mean percentage correct of 90%. What would you expect for these 25 participants for the second 50 items on the test?
    - ☐ Their mean percentage correct on the second 50 items is 90%.
    - ☐ Their mean percentage correct on the second 50 items is less than 90%.
    - ☐ Their mean percentage correct on the second 50 items is more than 90%.

35. Suppose that a researcher finds that, in the United States at the state level, the percentage of state residents with erectile dysfunction is associated with support for presidential candidate X. If the researcher therefore concludes that people with erectile dysfunction have higher levels of support for presidential candidate X, compared to people without erectile dysfunction, this method of inference best reflects which of the following?
    - ☐ an ecological fallacy
    - ☐ regression toward the mean
    - ☐ selection bias
    - ☐ Simpson's paradox
    - ☐ over-controlling

36. Researcher A measures the political interest of 200 participants at a rally held in Peoria for a presidential nomination candidate in the Democratic Party primary. Explain whether you think that this survey will underestimate, overestimate, or correctly estimate the level of political interest among Peoria residents.

37. Researcher A uses 10 five-option "strongly agree" to "strongly disagree" items to measure political ideology. Researcher B uses 3 five-option "strongly agree" to "strongly disagree" items to measure political ideology. For all measures, higher values are more liberal options and lower values are more conservative options. Both researchers sum the responses to the items to create a political ideology index. If Researcher A and Researcher B randomly drew the same number of participants from the same population, which of the following would be more likely?
    - ☐ Compared to Researcher B, Researcher A has a lower percentage of respondents who are at a most extreme value on the political ideology index.
    - ☐ Compared to Researcher B, Researcher A has a higher percentage of respondents who are at a most extreme value on the political ideology index.
    - ☐ Compared to Researcher B, Researcher A has the same percentage of respondents who are at a most extreme value on the political ideology index.

38. Explain your response for the prior item.

## LINEAR REGRESSION

[Items 39 to 40] Below are unweighted linear regression results from the 2018 CCES. The outcome variable **congressAPP** is congressional approval, coded from 0 for strongly disapprove to 1 for strongly approve. The only predictor is **educ**, which is coded from 1 for no high school diploma to 6 for a post-graduate degree.

```
. reg congressApp educ

                                                      Number of obs   =    54,107
------------------------------------------------------------------------------
 congressApp |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        educ |     -0.027      0.001   -33.75   0.000       -0.029      -0.026
       _cons |      0.385      0.003   118.66   0.000        0.379       0.392
------------------------------------------------------------------------------
```

39. Of the following, which BEST indicates what the 0.385 coefficient for the constant indicates?
    - ☐ For each one-unit increase in congressApp, the predicted value of educ increases by 0.385 units.
    - ☐ For each one-unit increase in educ, the predicted value of congressApp increases by 0.385 units.
    - ☐ Going from the lowest level of congressApp to the highest level of congressApp is predicted to associate with a 0.385 increase in educ.
    - ☐ Going from the lowest level of education to the highest level of education is predicted to associate with a 0.385 increase in congressApp.
    - ☐ The predicted value of congressApp is 0.385 for a participant with no high school degree.
    - ☐ The predicted value of congressApp would be 0.385 for a participant coded 0 on the educ predictor.

40. Of the following, which BEST indicates what the -0.027 coefficient for educ indicates?
    - ☐ For each one-unit increase in congressApp, the predicted value of educ decreases by 0.027 units.
    - ☐ For each one-unit increase in educ, the predicted value of congressApp decreases by 0.027 units.
    - ☐ Going from the lowest level of congressApp to the highest level of congressApp is predicted to associate with a 0.027 decrease in educ.
    - ☐ Going from the lowest level of education to the highest level of education is predicted to associate with a 0.027 decrease in congressApp.
    - ☐ The predicted value of congressApp is -0.027 for a participant with no high school degree.
    - ☐ The predicted value of congressApp would be -0.027 for a participant coded 0 on the educ predictor.

[Items 41 to 44] For the linear regression output below, everything is the same as in linear regression on the prior page, except that the regression now includes a **cons7** predictor, which is coded as the reported political ideology of each participant, from a 0 for very liberal to a 7 for very conservative.

```
. reg congressApp educ cons7

                                                      Number of obs   =    52,221
------------------------------------------------------------------------------
 congressApp |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        educ |     -0.016      0.001   -21.18   0.000          B           C
       cons7 |      0.060      0.001   100.39   0.000        0.059       0.061
       _cons |      0.101      0.004      A     0.000        0.093       0.109
------------------------------------------------------------------------------
```

41. Report what A would be in the output for _cons.

42. What can be known about B and C for the educ output?
    - ☐ Both B and C are positive.
    - ☐ Both B and C are negative.
    - ☐ Exactly one of B and C is negative.

43. Predict the level of congressApp for a participant who has a high school diploma only (coded 2 in educ) and is very conservative (7 on cons7).

44. Explain whether the output contains sufficient information to conclude with reasonable certainty that higher levels of education cause lower levels of approval for Congress.

[Items 45 and 46] Here are the two prior linear regressions:

```
. reg congressApp educ

                                                      Number of obs   =    54,107
------------------------------------------------------------------------------
 congressApp |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        educ |     -0.027      0.001   -33.75   0.000       -0.029      -0.026
       _cons |      0.385      0.003   118.66   0.000        0.379       0.392
------------------------------------------------------------------------------

. reg congressApp educ cons7

                                                      Number of obs   =    52,221
------------------------------------------------------------------------------
 congressApp |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        educ |     -0.016      0.001   -21.18   0.000          B           C
       cons7 |      0.060      0.001   100.39   0.000        0.059       0.061
       _cons |      0.101      0.004      A     0.000        0.093       0.109
------------------------------------------------------------------------------
```

45. Explain why the constant coefficient decreased from the first regression to the second regression.

46. Explain why the coefficient for educ is closer to zero in the second regression than in the first regression.

## INTERACTION TERMS

The output below is from a linear regression using the 2018 CCES data. The outcome variable is approval of Congress on a 0-to-1 scale (congressAPP). Predictors are Rcolor (1 for non-White participants, and 0 for Whiter participants) and education (educ, coded from 1 for the lowest level of education to 6 for the highest level of education). The Rcolor#c.educ predictor is the interaction of Rcolor and educ.

```
. reg congressApp i.Rcolor##c.educ

                                                      Number of obs   =    54,107
------------------------------------------------------------------------------
  congressApp |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
     1.Rcolor |     -0.067      0.008    -8.58   0.000       -0.082      -0.052
         educ |     -0.031      0.001   -33.42   0.000       -0.032      -0.029
              |
Rcolor#c.educ |
           1  |      0.015      0.002     7.62   0.000        0.011       0.019
              |
        _cons |      0.400      0.004   108.68   0.000        0.393       0.408
------------------------------------------------------------------------------
```

47. Which one of the following is the association of education and approval of Congress among non-White participants?
    - ☐ -0.098
    - ☐ -0.067
    - ☐ -0.031
    - ☐ -0.016
    - ☐ 0.015
    - ☐ 0.400

48. Which one of the following is the association of education and approval of Congress among White participants?
    - ☐ -0.098
    - ☐ -0.067
    - ☐ -0.031
    - ☐ -0.016
    - ☐ 0.015
    - ☐ 0.400

49. Report the predicted value of congressApp among White participants a 2 value for educ.

50. Report the predicted value of congressApp among non-White participants a 2 value for educ.

[Items 51 to 55] The output below predicts values of congressApp using these predictors, with the sample limited to California residents:

- Rwhite (1 for White participants, 0 otherwise)
- Rblack (1 for Black participants, 0 otherwise)
- Rhispanic (1 for Hispanic participants, 0 otherwise)
- Rasian (1 for Asian participants, 0 otherwise)

Let's use "other race participants" to refer to participants who are not coded 1 in one of the above predictors.

```
. reg congressApp Rwhite Rblack Rhispanic Rasian if state=="California"

                                                      Number of obs   =     4,813
------------------------------------------------------------------------------
 congressApp |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      Rwhite |       0.026      0.017     1.55   0.120       -0.007       0.058
      Rblack |      -0.003      0.023    -0.12   0.908       -0.047       0.042
   Rhispanic |       0.063      0.018     3.44   0.001        0.027       0.099
      Rasian |       0.093      0.021     4.41   0.000        0.052       0.135
       _cons |       0.235      0.016    14.98   0.000        0.205       0.266
------------------------------------------------------------------------------
```

51. Is there sufficient evidence at p<0.05 that, among participants who reside in California, the mean value of congressApp differs between White participants and "other race" participants?
    - ☐ Yes
    - ☐ No

52. Is there sufficient evidence at p<0.05 that, among participants who reside in California, the mean value of congressApp differs between Asian participants and "other race" participants?
    - ☐ Yes
    - ☐ No

53. Is there sufficient evidence at p<0.05 that, among participants who reside in California, the mean value of congressApp differs between Hispanic participants and Asian participants?
    - ☐ Yes
    - ☐ No

54. Is there sufficient evidence at p<0.05 that, among participants who reside in California, the mean value of congressApp differs between Black participants and Asian participants?
    - ☐ Yes
    - ☐ No

55. Suppose that we re-conducted the analysis replacing the Rblack predictor with an Rother predictor for the "other race" participants. The constant in that model should be ___.
    - ☐ 0.235
    - ☐ lower than 0.235
    - ☐ higher than 0.235

## LOGISTIC REGRESSION

The logistic regression below predicts values of voted (1 for voted in the 2018 midterm and 0 for did not vote in the 2018 midterm) using participant age (age, coded as the number of years of age the participant has, from a low of 18 to a high of 95), among participants who reside in California.

```
. logit voted age if state=="California"

Logistic regression                                     Number of obs     =      4,197
                                                        LR chi2(1)        =     211.90
                                                        Prob > chi2       =     0.0000
Log likelihood = -1254.6852                             Pseudo R2         =     0.0779

------------------------------------------------------------------------------
       voted |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         age |      0.046      0.003    13.44   0.000        0.039       0.052
       _cons |      0.125      0.147     0.85   0.398       -0.164       0.414
------------------------------------------------------------------------------
```

$$p = \frac{e^{\beta_0+\beta_1 x_1+\beta_2 x_{2+\cdots}}}{1 + e^{\beta_0+\beta_1 x_1+\beta_2 x_2+\cdots}}$$

56. Use the logistic regression output above and the formula above to predict the probability that a 30-year-old participant voted in the 2018 midterm election.

## COUNT MODELS

Below is a output for negative binomial regression using the 2018 CCES data to predict the number of different things that a participant reported doing on social media (such as posted a story, or posted a comment, or forwarded a story) using participant birth year (birthyr) and participant gender (coded 1 for male and 2 for female).

```
Negative binomial regression                    Number of obs     =     45,257
                                                LR chi2(2)        =    1006.46
Dispersion     = mean                           Prob > chi2       =     0.0000
Log likelihood = -78475.463                     Pseudo R2         =     0.0064

------------------------------------------------------------------------------
    socmedia |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     birthyr |     -0.005      0.000   -21.87   0.000       -0.006      -0.005
      gender |     -0.178      0.008   -21.49   0.000       -0.194      -0.162
       _cons |     11.111      0.467    23.78   0.000       10.196      12.027
-------------+----------------------------------------------------------------
    /lnalpha |     -1.602      0.027                        -1.656      -1.549
-------------+----------------------------------------------------------------
       alpha |      0.201      0.006                         0.191       0.213
------------------------------------------------------------------------------
LR test of alpha=0: chibar2(01) = 2067.29              Prob >= chibar2 = 0.000
```

57. True or false? The output indicates that, for each one-unit increase in birthyr, a participant is predicted to have on average selected 0.005 fewer items in the "socmedia" outcome variable.
    - ☐ True
    - ☐ False

58. True or false? The output indicates sufficient evidence that the negative binomial model is preferable to the Poisson model.
    - ☐ True
    - ☐ False

Below is output for a zero-inflated negative binomial regression using the age predictor from the prior regression.

```
. zinb socmedia age, inflate(age)

Zero-inflated negative binomial regression      Number of obs     =     45,257
------------------------------------------------------------------------------
    socmedia |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
socmedia     |
         age |       0.007      0.000    25.66   0.000        0.006       0.007
       _cons |       0.302      0.012    24.99   0.000        0.279       0.326
-------------+----------------------------------------------------------------
inflate      |
         age |       0.066      0.009     7.62   0.000        0.049       0.083
       _cons |      -7.667      0.681   -11.25   0.000       -9.002      -6.332
-------------+----------------------------------------------------------------
    /lnalpha |      -1.713      0.038   -44.55   0.000       -1.788      -1.638
-------------+----------------------------------------------------------------
       alpha |       0.180      0.007                        0.167       0.194
------------------------------------------------------------------------------
alpha |      0.000      0.000                          0.000           .
------------------------------------------------------------------------------
```

59. Interpret the output for age in the "inflate" subsection of the output.

60. Interpret the output for age in the "socmedia" subsection of the output.

61. Based on the output below, from SPost countfit command, which estimation technique is preferred?
    - ☐ Poisson
    - ☐ zero-inflated Poisson
    - ☐ negative binomial
    - ☐ zero-inflated negative binomial

```
Tests and Fit Statistics

PRM             BIC=   509.449  AIC=   501.663  Prefer  Over  Evidence
-------------------------------------------------------------------------
  vs NBRM       BIC=   514.044  dif=    -4.595  PRM     NBRM  Positive
                AIC=   503.663  dif=    -2.000  PRM     NBRM
                LRX2=    0.000  prob=    0.500  PRM     NBRM  p=0.500
-------------------------------------------------------------------------
  vs ZIP        BIC=   509.449  dif=     0.000          PRM   no
                AIC=   501.663  dif=     0.000  ZIP     PRM
                Vuong=       .  prob=        .  ZIP     PRM   p=.
-------------------------------------------------------------------------
  vs ZINB       BIC=   527.829  dif=   -18.380  PRM     ZINB  Very strong
                AIC=   509.663  dif=    -8.000  PRM     ZINB
-------------------------------------------------------------------------
NBRM            BIC=   514.044  AIC=   503.663  Prefer  Over  Evidence
-------------------------------------------------------------------------
  vs ZIP        BIC=   509.449  dif=     4.595  ZIP     NBRM  Positive
                AIC=   501.663  dif=     2.000  ZIP     NBRM
-------------------------------------------------------------------------
  vs ZINB       BIC=   527.829  dif=   -13.785  NBRM    ZINB  Very strong
                AIC=   509.663  dif=    -6.000  NBRM    ZINB
                Vuong=       .  prob=        .  ZINB    NBRM  p=.
-------------------------------------------------------------------------
ZIP             BIC=   509.449  AIC=   501.663  Prefer  Over  Evidence
-------------------------------------------------------------------------
  vs ZINB       BIC=   527.829  dif=   -18.380  ZIP     ZINB  Very strong
                AIC=   509.663  dif=    -8.000  ZIP     ZINB
                LRX2=    0.000  prob=    0.498  ZIP     ZINB  p=0.500
-------------------------------------------------------------------------
```

## STATISTICAL TECHNIQUES

62. Suppose that you conduct a study in which you measure support for Candidate X, then show participants a video, and then re-measure support for Candidate X. If you wanted to test the null hypothesis that the mean of the changes between the first measurement and the second measurement differs from zero, it would be more appropriate to conduct ___.
    - ☐ a paired t-test
    - ☐ an unpaired t-test

63. Explain what imputation is, and explain the advantage of multiple imputation over single imputation.

64. Suppose that you conduct a study in which you measure support for Candidate X, then show participants a video, and then re-measure support for Candidate X. If you wanted to test the null hypothesis that the mean of the first set of measurements differs from the mean of the second set of measurements, it would be more appropriate to conduct ___.
    - ☐ a paired t-test
    - ☐ an unpaired t-test

65. Adding an outlier to a dataset should be expected to ___.
    - ☐ reduce the p-value
    - ☐ increase the p-value
    - ☐ not change the p-value
    - ☐ have an unknown effect in the p-value unless more information were known

66. Explain one benefit of using the "robust" option in a linear regression.

[Use the letters below for the corresponding technique to respond to items 67 to 73]

A. a Brant test
B. meta-analysis
C. factor analysis
D. survival analysis
E. panel regression
F. linear regression
G. logistic regression
H. multinomial regression
I. a test for heteroskedasticity
J. negative binomial regression

67. Which of the techniques above would be best for assessing whether the parallel lines assumption of ordered logistic regression has been violated?

68. Which of the techniques above would be best for predicting an outcome variable coded 0 for "did not vote", coded 1 for "voted by mail", and 2 for "voted in person"?

69. Which of the techniques above would be best for predicting an outcome variable coded as the number of political assassinations a country had between 1900 and 2000?

70. Which of the techniques above would be best for predicting an outcome variable coded 0 for a U.S. Supreme Court precedent that has not been overturned and coded 1 for a U.S. Supreme Court precedent that has been overturned?

71. Which of the techniques above would be best for predicting the length of time it takes for a U.S. Supreme Court precedent to be overturned?

72. Which of the techniques above would be best for predicting an outcome variable coded 0 if a country did not experience a civil war in a given year and coded 1 if a country experienced a civil war in a given year, with one observation per year for each country from 1900 to 2000?

73. Which of the techniques above would be best for assessing whether six items measuring attitudes about different policies should be combined into an index measuring political ideology?

## WILD CARD

74. Researcher A predicts a 2016 U.S. presidential election vote choice outcome variable coded 0 for a vote for Hillary Clinton and 1 for a vote for Donald Trump. The first model has these predictors: participant gender, participant age, and participant race. The second model has these predictors: participant gender, participant age, participant race, and participant political ideology.

    Explain whether it should be expected that the $R^2$ for the first model differs from the $R^2$ for the second model; if there should be an expected difference, indicate which $R^2$ should be expected to be higher, and then explain why.

75. Non-randomly removing data from a dataset should be expected to ___.
    - ☐ reduce the p-value
    - ☐ increase the p-value
    - ☐ not change the p-value
    - ☐ have an unknown effect in the p-value unless more information were known

76. Suppose that you are predicting the number of marriage ceremonies conducted in each state. None of the observations are zero, but Nevada is an outlier with a large number of marriage ceremonies conducted. Select all and only the following things that can be done to your outcome variable that would reduce the effect of the outliers and not result in the loss of observations for this study.
    - ☐ square the number of marriage ceremonies conducted
    - ☐ square root the number of marriage ceremonies conducted
    - ☐ take the natural log of the number of marriage ceremonies conducted
    - ☐ divide the number of marriage ceremonies conducted by the maximum observed number of marriage ceremonies conducted

77. Which one of the following would be most appropriate to test the null hypothesis that percentage of religious based terror attacks is higher than the percentage of non-religious based terror attacks?
    - ☐ a one-tailed t-test
    - ☐ a two-tailed t-test
    - ☐ a one-tailed proportion test
    - ☐ a two-tailed proportion test

78. Researcher A and Researcher B measure support for the police using the same item. Researcher A's sample is drawn from ISU undergraduates, and Researcher B's sample includes only police officers. Researcher A's sample size equals Researcher B's sample size. Based on this, it should be expected that the standard error for Researcher A's study is ___ the standard error for Researcher B's study.
    - ☐ the same as
    - ☐ larger than
    - ☐ smaller than

79. Explain your response to the above item.

80. Suppose that I am using a linear regression to predict a participant's lifetime earnings, using only a predictor for the participant's age. I collect data from 1,000 participants in the fall of 2020, asking each participant to indicate their age and to estimate their lifetime earnings. Explain whether you would expect heteroskedasticity to be a problem for this analysis.

81. Suppose that I test the hypothesis that watching the news on television increases a person's interest in politics. I predict a participant's self-reported interest using these predictors: participant gender, participant race, participant age, whether the participant voted in the most recent presidential election, a measure of whether that participant watches the news on television. Explain whether this research design has a problem with undercontrolling, a problem with overcontrolling, a problem with both, or a problem with neither.

82. Explain why a regression might cluster standard errors.

83. Explain what the multiple comparisons problem is.

**APPENDIX C**
**Sample Assignment for**
**POL 497 Introduction to Research Methodology**

**INSTRUCTIONS TO OC #6**
**BINARY LOGIT ANALYSIS**
**DUE DAY 3/11/2021 Dr. WANG**
(25 points, Late papers are subject to a 5% penalty each day up to 50%).

This assignment requires you to replicate Table 1 (**only on the findings of death penalty**) of the study by Songer and Crews-Meyer (Songer, Donald and Kelley A. Crews-Meyer. 2000. "Does Judge Gender Matter? Decision Making in State Supreme Courts." *Social Science Quarterly*, v.81, no.3: 750-762, stored in the "Assignment files" folder of ReggieNet; file name: Songer_Jude.2000.pdf) and to provide substantive analysis of the binary logit results. You should

1. assume that you are the author
2. provide a brief report which summarizes key hypotheses, related variables, empirical findings and possible theoretical and policy implications

*NOTE: because this is a replication exercise, no citations are required. Students should also present the analysis in their own words to avoid possible plagiarism.*

This assignment should be submitted electronically by email at tywang@ilstu.edu, no longer than three pages, including the table summarizing the regression results (Note: print-screen of tables is not acceptable). Please also attach the computer printout (with additional pages). This assignment must be TYPED (with 12 point type size), and double-spaced.

File name: ***judge_sub.dta*** (this file locates in the "Data and code" folder of ReggieNet)

## APPENDIX D

**Illinois State University**
**Department of Politics and Government**
**Graduate Survey 2019**

This survey is part of the Department of Politics and Government's annual self-assessment. It is intended to both assess the extent to which the graduate program is achieving its learning outcomes goals and garner constructive feedback that we might use to improve the graduate program.

Responses will be kept confidential, and participation is voluntary. There is no penalty if you choose to not take the survey or fail to complete it; however, each graduate student must return the signed cover sheet with a completed survey with scantron sheet, a partially completed survey with scantron sheet, or a blank survey with scantron sheet.

If you have any questions, please direct them to either Dr. Kam Shapiro, Director of the Graduate Program, at 309-438-7622, or Dr. L.J Zigerell, Director of Assessment, at 724-561-8280.

Directions:

1. Please complete this survey only if you are a graduate student who is currently enrolled in the MA degree program in the Department of Politics and Government.

2. Print and sign your name in the spaces below. Tear off this cover sheet and submit it to Jennifer Han with your survey. Her contact information is: jjhan@ilstu.edu, 4600 Politics and Government, Illinois State University, Normal, IL 61790-4600.

Thank you for your participation!

Print your name: _____

Sign your name: _____

*** PLEASE RESPOND TO ITEMS 1 TO 46 ON THE OPSCN SHEET. ***

**First, we would like to know a little more about you.**

1. For how many semesters have you been enrolled in the Political Science MA program at ISU, including this semester?
   A. 1
   B. 2
   C. 3
   D. 4
   E. more than 4

2. Which ONE of the following best describes your coursework focus?
   A. American politics
   B. Comparative politics
   C. International relations
   D. Public administration
   E. None of the above

3. Which graduate sequence(s) do you intend to complete?
   A. Applied Community and Economic Development
   B. Global Politics and Culture
   C. Public Service
   D. M.A./M.S. in Political Science

4. Which graduation requirement do you plan to complete?
   A. comprehensive exam
   B. master's thesis
   C. the Applied Community and Economic Development 39-hour option
   D. Other

5. Have you received graduate academic credit in the Politics and Government Department for an internship?
   A. Yes
   B. No

6. Have you taken a graduate independent study or readings course?
   A. Yes
   B. No

7. Do you plan to pursue another degree after you complete your MA in political science? If so, which degree?
   A. No plans for another degree
   B. Plans for a law degree
   C. Plans for another master's degree
   D. Plans for a Ph.D.
   E. Plans for some other degree

8. Which BEST describes your employment goals?
   A. teaching or academia
   B. nonprofit work
   C. employment at a for-profit business
   D. other

9. Before you began taking this survey, were you aware of the graduate program's learning outcomes?
   A. Yes
   B. No

10. How would you rate the Department of Politics and Government graduate program overall?
    A. Excellent
    B. Good
    C. Neutral
    D. Fair
    E. Poor

11. Which BEST describes you?
    A. female
    B. male
    C. other
    D. Choose to not report

**Next, we would like to hear your thoughts about the extent to which the graduate program is achieving its learning outcomes. Please mark your response.**

| | | Yes, very well | Yes, acceptably well | Yes, but not well enough | Not at all |
|---|---|---|---|---|---|
| **Did your Politics and Government graduate courses improve your ability to___?** | | | | | |
| 12 | ...communicate through writing | A | B | C | D |
| 13 | ...communicate through speaking | A | B | C | D |
| 14 | ...give presentations | A | B | C | D |
| 15 | ...work with others | A | B | C | D |
| 16 | ...understand research methods | A | B | C | D |
| 17 | ...use a variety of research methods | A | B | C | D |
| 18 | ...explain and defend your views | A | B | C | D |
| 19 | ...better understand and tolerate political views you disagree with | A | B | C | D |
| 20 | ...understand and explore complex social and political issues | A | B | C | D |
| 21 | ...apply critical thinking to understand and evaluate political ideas, institutions, and processes at the local, national, and global level | A | B | C | D |
| 22 | ...understand and assess the values embedded in political issues | A | B | C | D |
| 23 | ...recognize and explain the dimensions of the significant events, ideas, individuals, social movements, and institutions that have shaped our world | A | B | C | D |
| 24 | ...formulate a critically informed position on participation and citizenship in local, national, and global communities | A | B | C | D |

| | | Yes, very well | Yes, acceptably well | Yes, but not well enough | Not at all |
|---|---|---|---|---|---|
| **How well did the Politics and Government graduate program ___?** | | | | | |
| 25 | ...train you to write research papers | A | B | C | D |
| 26 | ...train you in quantitative methods | A | B | C | D |
| 27 | ...train you in qualitative methods | A | B | C | D |
| 28 | ...train you to evaluate research | A | B | C | D |
| 29 | ...inform you about opportunities to present research at conferences | A | B | C | D |
| 30 | ...offer you opportunities to conduct your own research | A | B | C | D |
| 31 | ...offer you opportunities to collaborate with faculty on research | A | B | C | D |
| 32 | ...make you feel comfortable expressing your political views in situations in which that was appropriate | A | B | C | D |

| | | Yes, very well | Yes, acceptably well | Yes, but not well enough | Not at all | NO CHANCE TO ASSESS |
|---|---|---|---|---|---|---|
| **Did the Department of Politics and Government <u>graduate assistantships</u> ___?** | | | | | | |
| 33 | …contribute to development of your teaching skills | A | B | C | D | E |
| 34 | …contribute to development of your research skills | A | B | C | D | E |
| 35 | …contribute to your civic and political engagement | A | B | C | D | E |
| 36 | …contribute to your professional development | A | B | C | D | E |

**Next, we would like to hear about your experiences with graduate advising and mentorship in the Department of Politics and Government.**

| | | Agree strongly | Agree somewhat | Neither agree nor disagree | Disagree somewhat | Disagree strongly |
|---|---|---|---|---|---|---|
| 37 | I am satisfied with the academic advising in the Department of Politics and Government. | A | B | C | D | E |
| 38 | I am satisfied with the information provided about internships. | A | B | C | D | E |
| 39 | I am satisfied with the advisement regarding graduation requirements. | A | B | C | D | E |
| 40 | The Department of Politics and Government does a good job of orienting new graduate students to the program. | A | B | C | D | E |
| 41 | The ISU Graduate Catalog is a useful resource. | A | B | C | D | E |
| 42 | The Department of Politics and Government's Graduate Handbook is a useful resource. | A | B | C | D | E |
| 43 | The Catalog and Handbook provide clear and sufficient information about course offerings. | A | B | C | D | E |
| 44 | The Catalog and Handbook provide clear and sufficient information about graduate degree requirements. | A | B | C | D | E |
| 45 | I feel comfortable meeting with Department of Politics and Government advisors and professors. | A | B | C | D | E |
| 46 | The Department of Politics and Government faculty members want me to succeed. | A | B | C | D | E |

**Please answer the following questions as thoroughly as possible.**

47. Please provide any additional comments about teaching in the graduate program.

48. Please provide any additional comments about research opportunities in the graduate program.

49. Please provide any additional comments about advising/mentorship in the graduate program.

50. Please provide any additional comments about graduate assistantships in the graduate program.

_____

_____

_____

_____

_____

_____

51. Please provide any additional comments about the graduate program on any topic.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

**Thank you for your participation!**

## APPENDIX E
## 2018 ISU Politics and Government Graduate Focus Group Prompts

Read: "This focus group is part of the Department of Politics and Government's annual self-assessment. The focus group discussion will be recorded, transcribed into text, and reviewed to assess how well the Department is doing and how the Department can better serve our students. Student names will not be included in the transcription. Please direct any questions to Dr. L.J Zigerell, Director of Assessment for the Department of Politics and Government."

1. What attracted you to the Department of Politics and Government's graduate program?
2. The Department of Politics and Government wants its students to learn about politics and to develop important skills. What is the Department doing well and how could the Department do better in teaching writing skills?
3. What is the Department doing well and how could the Department do better in teaching presentation skills?
4. What is the Department doing well and how could the Department do better in teaching how to think critically about politics?
5. What is the Department doing well and how could the Department do better in teaching quantitative research methods?
6. What is the Department doing well and how could the Department do better in teaching qualitative research methods?
7. What is the Department doing well and how could the Department do better in helping students better understand and tolerate diverse political opinions and political ideas?
8. What is the Department doing well and how could the Department do better in preparing you to meet your professional or academic goals?
9. Would you say that, because of the political science courses you have taken at ISU, you are more likely to think of yourself as being part of a global community? If so, why?
10. In Politics and Government graduate courses in which you were offered an opportunity to express your political views, did you often or always feel comfortable expressing your political views?
11. In addition to what was already mentioned, what are some other things that you think the ISU graduate program in Politics and Government is doing well?
12. In addition to what was already mentioned, what are some other things that you think the ISU graduate program in Politics and Government could improve on?