Paper instructions: You will write a research proposal for a white clover experiment. Writing must be professional, concise, and original. SafeAssign/TurnItIn will be used to evaluate the originality of your writing. Format (all parts) • ● 1-inch margins • ● 12 pt. font. • ● The text should be double-spaced in the main sections of the proposal. ○ The Bibliography and Figure legends should be single-spaced. • ● Each section should be labeled with the appropriate subheading. • ● There is no specific length. Ask yourself - have I included the necessary information? Part 1 (40 points) ● Submit a full draft of your research proposal containing - Introduction - Methods - Experimental Design - Quantitative Predictions & Statistics - Bibliography Objectives: • ● Write a scientific Introduction that proposes a testable hypothesis. • ● Identify peer-reviewed literature that provides background/supporting information for a hypothesis. • ● Properly reference literature in a Bibliography and with in-text citations. No quotes; paraphrase! Your proposed hypothesis must be related to white clover (Trifolium repens), which is the focal organism of this course and the subject of our Clover CURE. Here are ideas to stimulate your thinking... • ● Watch the Clover ID video: https://youtu.be/\_GEM6dZidXQ • ● Your hypothesis could be related to testing whether an ecological variable (biotic or abiotic) affects urban evolution in white clover. • ● Your hypothesis can be related to cyanogenesis, but it doesn’t have to be. You can also consider other traits that might be affected by an urban environment. • ● You might consider how different clover traits affect one another (and how those effects might differ in urban vs. rural settings). Energy is limited; what are the tradeoffs between producing a chemical defense and growing or reproducing in different places? Where are chemical defenses most valuable, and where might they be less valuable? • ● Another way to think about it: which ecological differences (predictor variables) between urban/rural environments do you hypothesize might impose selection for or against white clover traits (response variables: cyanogenesis or other plant traits)? • ● Design a controlled/manipulative or natural/observational experiment to test a hypothesis. • ● Write a scientific Methods section for a proposed experiment. • ● Construct figures in Excel to match predictions that follow from null and alternate hypotheses. • ● Explain figures in writing, both in the written Methods section and also in figure legends.