

Geodesign Evaluation Instrument (Rubric)

Evaluation	Criteria
<i>Data Inventory</i>	
<p>Most effective*</p> <p>(*Includes Effective criteria)</p>	<ul style="list-style-type: none"> • The student’s work showed a strong understanding of various data collection methodologies and data requirements. • The project did not have important missing variables and variables were collected at the correct spatial resolution. • Both primary and secondary data collection can be replicated (e.g. the student used an instrument/method for collecting primary data that is replicable, valid, and appropriately cited secondary data sources or instruments). • The sampling protocol was appropriate given the time allotted and context of the project (e.g., multiple times and locations). • The student used a range of data collection methods (e.g. site reconnaissance, participant observation, field interviews, physical accretion measures, and secondary data).
<p>Effective</p>	<ul style="list-style-type: none"> • The student collected primary (e.g., site observations, interviews, surveys) and secondary (e.g. GIS data). • The work showed an adequate understanding of appropriate data collection methods including variable selection, use of data collection instruments, data resolution, and/ data validity and accuracy. • Data collection was systematic, but methods were flawed or simplistic (e.g., observationally counting people and not noting if they were male, female, age group, homeless). • The project was missing minor variables or variable definitions are simplistic (e.g., pervious versus impervious, instead of a more complex pervious classification of meadow, lawn, forest, shrub, concrete, asphalt, field). • The student used two or fewer data collection methods (e.g., site reconnaissance, participant observation, field interviews, physical accretion measures, and secondary data). • Data were collected with the appropriate measurement (e.g., nominal, ordinal, interval/ratio, or continuous).
<p>Least effective</p>	<ul style="list-style-type: none"> • The student collected primary or secondary data. • The project was flawed in its data collection methods (e.g. the project included missing variables, incomplete or overly simplistic data collection instrument, used inappropriate data resolution, or data sources). • Only a small amount of data was collected. • The student used only one data collection method (e.g., site reconnaissance, participant observation, field interviews, physical accretion measures, or only secondary data). • The student used a data collection method that was not appropriate for his/her research question. • Data were not collected with the appropriate type of measurement (e.g., nominal, ordinal, interval/ratio, or continuous).
<p>None</p>	<ul style="list-style-type: none"> • The student did not collect data. • The project missed a number of key variables.

Evaluation	Criteria
<p>Most effective* (*Includes Effective criteria)</p>	<p style="text-align: center;"><i>Findings</i></p> <ul style="list-style-type: none"> • The student produced findings that were supported by data, with no misrepresented findings. • Findings were quantified/qualified, and findings showed an understanding of interactions within and between different systems (e.g. land use decisions that lead to flood vulnerability and habitat degradation). • The project had multiple levels of findings, and showed the interaction or cause and effects between findings. • All findings were supported by evidence in a logical manner. • If statistics were used to derive findings the student showed an understanding of statistical concepts and application.
<p>Effective</p>	<ul style="list-style-type: none"> • The student produced findings that were supported by data. • A few findings were misrepresented (e.g., drawing conclusions about correlations without performing statistical analysis). • Findings were confined inappropriately to single systems (e.g., with respect to research on community flood vulnerability, students evaluated physical risk but not social dimensions). • The student had two levels of findings (e.g., primary and secondary findings) but there was minimal to no interaction between findings or the interactions were simplistic. • Some findings were not fully documented.
<p>Least effective</p>	<ul style="list-style-type: none"> • The majority of the findings were poorly supported by data (e.g., findings speak to social justice but no social data were presented). • Findings were overly simplistic (e.g., asserting that there were flooding problems without indicating how much, where and what the associated social or planning problems were). • Findings were not presented in a systematic or logical manner (e.g., the findings are not related to the student's problem definition or are based on a misinterpretation of the data). • The student had a single level of findings and findings did not interact with each other.
<p>None</p>	<ul style="list-style-type: none"> • The student had no findings. • The student produced findings, but no data was used to support their findings.

Evaluation	Criteria
<i>Data Processing and Presentation</i>	
Most effective* (*Includes Effective criteria)	<ul style="list-style-type: none"> • The presentation of data and findings showed an above adequate level of sophistication (e.g. the data and findings were easy to read and understand for all audiences) and used highly refined color theory, graphic design principles, and line weights. • Key data collection manipulation steps could be replicated with no assumptions needed. • Citations for secondary data were properly formatted.
Effective	<ul style="list-style-type: none"> • The presentation of data and findings showed an adequate level of sophistication (e.g. the data and findings were easy to read and understand, but probably only for a professional audience) and used basic color theory, graphic design principles, and line weights. • Data and findings were presented using a range of techniques (e.g., chart, graph, table, text, infographics, sections, plans, maps, sketches, perspectives, models, and/or flow charts). • Key data manipulation steps could be replicated with very minor to no assumptions. • Quantitative data was normalized. • Qualitative data was defined; no assumptions are needed to understand what the student is presenting.
Least effective	<ul style="list-style-type: none"> • The presentation of data and findings showed an overall lack of sophistication (e.g., difficult to read and easily understand) and information was presented crudely (e.g., lacked basic understanding of color theory, graphic design principles, and line weights). • The student consistently used inappropriate graphics to communicate data and findings (e.g. the student discussed specific locations of data with no map to reference or the student talked about trends of data while referring to a pie chart, when a line graph would have a better choice for communicating trends). • Data and findings were presented using a limited range of techniques (e.g. an abundance of text and/or a single graphical element (chart, graph, table, text, infographics, sections, plans, maps, sketches, perspectives, models, and/or flow charts) when a different or several techniques would have helped reinforce the data and student findings). • Key data collection and presentation could be replicated with some assumptions, while minor or secondary data collection and presentation cannot be replicated. • Quantitative data was normalized, but needs refinement to provide more meaningful results (e.g. lot coverage instead of FAR when talking of development intensity and vice versa using FAR when they were discussing density); however, the student did understand the need for normalization. • Qualitative data was poorly defined, requiring assumptions to understand what the student was presenting. • No citations for secondary data.
None	<ul style="list-style-type: none"> • The student presented no data. • The student presented flawed data. • The data collection and presentation could not be replicated or duplicated because the student does not communicate data collection methods, instruments, and sources – overall lack of precision, accuracy, validity, and reliability. • Quantitative data was not normalized, thus dangerously misrepresenting the proportionality of the data.

Evaluation	Criteria
<i>Responsiveness</i>	
Most effective* (*Includes Effective criteria)	<ul style="list-style-type: none"> • The design responded to the student’s findings and data collection in a sophisticated manner, going above and beyond basic program and design concept (e.g. used data and findings across multiple systems at a time creating multiple function spaces). • The spatial structure of the design was easy to understand and matches the student’s findings, data, program, and design concept in a sophisticated manner. • Each finding was linked to design elements in a recognizable, sophisticated, deliberate, and thoughtful way.
Effective	<ul style="list-style-type: none"> • The design responded to the student’s findings and data collection and had all core elements represented and presented in a logical way, but does not go above and beyond (e.g. used data and findings for single systems at a time and in a basic way, meaning single system/single function spaces). • The spatial structure of the design was easy to understand and matched the student’s findings, data, program, and design concept, but in a basic way, lacking refined sophistication. • Basic support was given, linking the design to data and findings.
Least effective	<ul style="list-style-type: none"> • The design responded to the student’s findings and data collection, but only in a secondary nature and in non-explicit ways (e.g., the student described flooding as a significant issue, but proceeded to do only token flood design elements such as stream bank re-vegetation, having added significant program/design elements into the floodplain that exacerbated flooding concerns). • The spatial structure of the design was hard to understand, basic, and was not supported by the student’s findings, data, program, and/or design concept; however, an attempt to address them was demonstrated (e.g., presentation of the design spoke about the need for an intimate space yet the space was an open plaza for 100 people). • No detailed support was given linking the design to data and findings except cursory statements (e.g., students declared that flooding was an issue and thus they included a park in their design).
None	<ul style="list-style-type: none"> • The student did not use data to support their design. • The student presented data and findings, but disregarded data and findings, e.g., emphasizing pure artistic statement. • The design program and concept were at odds with the student’s data and findings.

Evaluation	Criteria
<i>Analysis</i>	
Most effective* (*Includes Effective criteria)	<ul style="list-style-type: none"> The student used the appropriate analysis; the analysis employed a combination of advanced and intermediate techniques (i.e. flow models, interaction models, statistics, simulation, and trend models).
Effective	<ul style="list-style-type: none"> The student used analysis in their design and the analysis was defined in a manner that could be replicated (e.g. the definitions, thresholds, and steps of the analysis were clear). The student used the appropriate analysis but underrepresented the complexity of their design elements, e.g., employed only a single technique (e.g., buffer, network, overlay, suitability, or comparative analyses) to evaluate their design. The student's design relied on overly simplistic analysis (e.g. a simple buffer analysis to determine where new bus stops should be located, with disregard for other data and variables within the analysis, such as population density, pedestrian density, and demand).
Least effective	<ul style="list-style-type: none"> The student used analysis in their design, but the analysis was incomplete or poorly defined, and thus could not be replicated (e.g., the definitions, thresholds, and steps of the analysis were not communicated and are not evident in the design). The student used analysis incorrectly (e.g. the student used a simple single distance buffer analysis instead of a multi-ring buffer or spatial network analysis) resulting in a design with misplaced or incorrect design elements.
None	<ul style="list-style-type: none"> The student did not use analysis in their design. The student's design contradicted the student's analysis

Evaluation	Criteria
<i>Multi-Disciplinarity</i>	
Most effective* (*Includes Effective criteria)	<ul style="list-style-type: none"> The student showed strong command of multi-disciplinary approaches and the design reflected a fluid command of each (e.g. the design could not be subdivided into contributions representing discrete professions).
Effective	<ul style="list-style-type: none"> The student used multi-disciplinary elements in their design and demonstrated the capacity to discuss the pros and cons of each discipline's design solutions, and to use a systems approach to balance options from across the disciplines (e.g., when addressing storm water runoff the student compared rain gardens, green roofs, and water management policy).
Least effective	<ul style="list-style-type: none"> The student used multi-disciplinary elements or approaches in their design solutions, but a single discipline was over-represented in their design (e.g. when addressing storm water the student applies only green roofs while ignoring policy, morphology, or other disciplinary solutions).
None	<ul style="list-style-type: none"> The student did not use multi-disciplinary elements or approaches in their design solutions (e.g., relied exclusively on architecture, landscape architecture or planning).

Evaluation	Criteria
<i>Clarity of Design</i>	
Most effective* (*Includes Effective criteria)	<ul style="list-style-type: none"> The spatial structure of the student's design included enough details of the built environment to be clear and understandable. The work communicated a compelling design idea or theme, in a sophisticated manner, and all of the important elements of the design were clearly explained. The student's design was directly linked to and provided a response to the design problem, which was evident throughout the design (e.g. from concept through design details).
Effective	<ul style="list-style-type: none"> The spatial structure and most of details of the built environment created by the student's design were clear and understandable. The student's work communicated a good design idea or theme in an adequate manner, and most of the important elements of the design were explained. The student's design was mostly linked to and provided a response to the design problem, which was evident throughout the design (e.g. from concept through design details).
Least effective	<ul style="list-style-type: none"> The spatial structure and details of the built environment created by the student's design were not clear. The student's work communicated an adequate design idea or theme, in an adequate manner, but key elements of the design idea were not explained. Little of the student's design was linked to and provided a response to the design problem.
None	<ul style="list-style-type: none"> The student did not clearly present their design. Incomplete idea. Lacked detail.

Evaluation	Criteria
<i>Performance Measurement</i>	
Most effective* (*Includes Effective criteria)	<ul style="list-style-type: none"> The student used metrics to evaluate at least two design alternatives and existing conditions (e.g., comparison of pre- and post-development changes on differing types of impervious surface and effects on stormwater run-off).
Effective	<ul style="list-style-type: none"> The student used metrics to evaluate at least one design alternative and existing conditions (e.g., compared pre- and post-development land use changes on differing types of impervious surface and effects on stormwater run-off). Measurement methods were appropriate and metrics were clearly-defined. Only a single iteration of evaluation was used to support a single revision of design. No calculation errors.
Least effective	<ul style="list-style-type: none"> The student used metrics to evaluate at least one design alternatives and existing conditions (e.g., comparison of pre- and post-development changes on differing types of impervious surface and effects on stormwater run-off). Measurement methods had errors, poorly-defined variables or inappropriate metrics. Some calculation errors.
None	<ul style="list-style-type: none"> The student did not evaluate their design using performance metrics or compare the pros and cons of design alternatives and scenarios. Metrics and indicators showed numerous calculation errors or inappropriate measurements.

Evaluation	Criteria
<i>Justice</i>	
Most effective* (*Includes Effective criteria)	<ul style="list-style-type: none"> • The design showed the student had conceptualized user and client interests, needs, demands, behaviors, and aspirations. • Disadvantaged groups were not just represented in the design, but integrated into the program and design concept.
Effective	<ul style="list-style-type: none"> • The student explained and described who the users and clients were and their relationship to the design. • The design responded to each user group and client. • The design created a balance between primary user groups and disadvantaged user groups, while meeting clients programming needs. • This design had a few minor missing elements, not all groups were fully represented, some were minimally represented, but more than a token mention or representation. • The design responded to an understanding of user and client interests, needs, demands, behaviors, and aspirations. • The program was detailed and thorough.
Least effective	<ul style="list-style-type: none"> • The student mentioned user groups and clients, but the design did not integrate or balance solutions for each user group. • The student missed or ignored a sub-user group, but the dominant user groups were represented in the design. • The student provided a program, but the design only partially reflected the program and/or the program was overly simplistic (e.g. clients needed more park space, so the design provided an open lawn, but no additional detail was given). • The design responded to a limited understanding of user and client interests, needs, demands, behaviors, and aspirations.
None	<ul style="list-style-type: none"> • The student did not mention user groups or clients. • The student did not discuss program. • The student's design was counter to the user and client program.

Evaluation	Criteria
<i>Communication</i>	
<p>Most effective*</p> <p>(*Includes Effective criteria)</p>	<ul style="list-style-type: none"> • The student framed and communicated the design problem and process with a high level of sophistication and understanding of the complex interactions between politics, economy, social, natural, and human behavior. • No important spelling, grammatical, or graphic design errors. • All labels, legends, line weights, color, perspective, plan, map, sections, infographics, models, digital composites, and sketches communicated the design problem and showed a high level of craft. • The student used advanced principles of graphic design, color theory, and design communication, demonstrating their ability to choose appropriate communication methods. • The student described their entire design process, communicating to both a lay and professional audience. Students, designers, or specialists could duplicate the process.
<p>Effective</p>	<ul style="list-style-type: none"> • The student framed and communicated the design problem and process with a moderate level of sophistication and understanding of the complex interactions between politics, economy, social, natural, and human behavior. • Moderate to few spelling, grammatical, or graphic design errors. • Only minor elements were missing from the description of the design problem and process. • All labels, legends, line weights, color, perspective, plan, map, sections, infographics, models, digital composites, and sketches communicated the design problem and design showed a basic level of craft. • The student used appropriate principles of graphic design, color theory, and design communication; however, certain choices could be further refined.
<p>Least effective</p>	<ul style="list-style-type: none"> • The student framed and communicated the design problem and process with a low level of sophistication and understanding of the complex interactions between politics, economy, social, natural, and human behavior. • Numerous spelling, grammatical, or graphic design errors. • The work was missing major elements from discussion of the design problem and process. • Labels, legends, line weights, color, perspective, plan, map, sections, infographics, models, digital composites, and sketches showed minimal craft. • The student showed a lack of understanding principles of graphic design, color theory, and design communication and did not choose appropriate communication methods (e.g. the student included a large table of descriptive statistics with no text hierarchy when a chart, graph, or infographics would have been more appropriate). • The student communicated their design but in limited fashion, leaving the reviewer to guess at a large portion of design detail. • The student used inappropriate wording or graphical elements to convey design ideas (e.g., the students was discussing volumetric built environment elements while referring to a plan instead of a section or perspective, etc.). • The student's work lacked overall refinement in design communication (e.g., missing legends, labels, misspellings, technical jargon, etc.). • The student used an incorrect scale and inadequate detail, with only parts of the design adequately communicated.
<p>None</p>	<ul style="list-style-type: none"> • The student did not frame and communicate the design problem or process. • The student misinterpreted large portions of the design problem or process. • The student work was otherwise incomplete.

Evaluation	Criteria
<i>Public and Client Participation</i>	
Most effective* (*Includes Effective criteria)	<ul style="list-style-type: none"> • The student reviewed opportunities for participation in public process or other forms of agency review. • The student reviewed administrative requirements and conceptual frameworks for participation. • The student submitted designs and plans to a public participation process or other form of agency review. • The student modified final plans and designs based on input obtained from agency review.
Effective	<ul style="list-style-type: none"> • The student discussed project work plan and schedule with clients. • The student discussed project objectives with clients. • The student presented designs and plans to clients at two or more points during the course. • The student work showed evidence of client influence.
Least effective	<ul style="list-style-type: none"> • The student presented only final designs and plans to clients acting as part of a jury.
None	<ul style="list-style-type: none"> • The student did not interact with clients or the public.

Evaluation	Criteria
<i>Community Engagement</i>	
Most effective* (*Includes Effective criteria)	<ul style="list-style-type: none"> • The student engaged community participants in on-going dialogue. • The student collected systematic and defensible data from community participants suitable for introduction in public discussion. • The student modified plans and designs based on community participant comments. • The student presented designs and plans to the community at large through public meetings exhibitions, website, etc.
Effective	<ul style="list-style-type: none"> • The student presented designs and plans to community participants at two or more points in the course. • The student systematically identified key stakeholders and other potential community participants. • The student discussed or otherwise gathered information from community participants about values, positions, interests, attitudes, etc. relevant to the project.
Least effective	<ul style="list-style-type: none"> • The student discussed or otherwise gathered information from community participants about values, positions, interests, attitudes, etc. relevant to the project, but only presented designs and plans to community participants at the final review.
None	<ul style="list-style-type: none"> • The student did not engage with the community in development of the project. • The student did not present their work to community participants.