Leveraging GeoPlanner for Online Geodesign Education

David E. Goldberg, ASLA
Geodesign at Penn State

- Master of Professional Studies in Geodesign (35 credits)
- Graduate Certificate in Geodesign (14 credits)
- Geodesign Option within the current MGIS Program (9 credits)
Geodesign at Penn State

- Curriculum is rooted in Dr. Steinitz’s “A Framework for Geodesign.”
- Guided by an international advisory team.
- Offered completely online by Penn State’s World Campus.
Geodesign at Penn State

Master of Professional Studies in Geodesign
(35 credits)
• Geodesign History, Theory, Principles
• Geodesign Models I: Evaluation and Decision
• Geodesign Models II: Process and Impact
• OR Geodesign Models II: Process and Impact
• Geodesign History, Theory, Principles
• Geodesign Models I: Evaluation and Decision
• Geodesign Models II: Process and Impact
• OR Geodesign Models III: Representation and Change
• Geodesign Capstone Project Proposal and Peer Review
• Geodesign Capstone Project Dissemination

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geodesign.psu.edu
# Geodesign at Penn State

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- Geodesign History, Theory, Principles
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- **OR** Geodesign Models III: Representation and Change
- Geodesign Studio I: Rural/Regional Challenges
- Geodesign Studio II: Urban/District-scale Challenges
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Geodesign at Penn State

Theory Course

Scope the study

- REPRESENTATION MODELS
- PROCESS MODELS
- EVALUATION MODELS
- CHANGE MODELS
- IMPACT MODELS
- DECISION MODELS

Scoping Document

Adapted from Steinitz “A Framework for Geodesign”
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Scope the study
- REPRESENTATION MODELS
- PROCESS MODELS
- EVALUATION MODELS
- CHANGE MODELS
- IMPACT MODELS
- DECISION MODELS

Model Courses
- REPRESENTATION MODELS
- PROCESS MODELS
- EVALUATION MODELS
- CHANGE MODELS
- IMPACT MODELS
- DECISION MODELS

Specify methods

Adapted from Steinitz “A Framework for Geodesign”
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Geodesign at Penn State

Scope the study

- REPRESENTATION MODELS
- PROCESS MODELS
- EVALUATION MODELS
- CHANGE MODELS
- IMPACT MODELS
- DECISION MODELS

Specify methods

- REPRESENTATION MODELS
- PROCESS MODELS
- EVALUATION MODELS
- CHANGE MODELS
- IMPACT MODELS
- DECISION MODELS

Perform Study

Studios

- REPRESENTATION MODELS
- PROCESS MODELS
- EVALUATION MODELS
- CHANGE MODELS
- IMPACT MODELS
- DECISION MODELS

Adapted from Steinitz “A Framework for Geodesign”
The Model Courses

6 models in 3 courses
Paired Model Courses

Models I
Evaluation & Decision
- REPRESENTATION MODELS
- PROCESS MODELS
- EVALUATION MODELS
- CHANGE MODELS
- IMPACT MODELS
- DECISION MODELS

Models II
Process & Impacts
- REPRESENTATION MODELS
- PROCESS MODELS
- EVALUATION MODELS
- CHANGE MODELS
- IMPACT MODELS
- DECISION MODELS

Models III
Representation & Change
- REPRESENTATION MODELS
- PROCESS MODELS
- EVALUATION MODELS
- CHANGE MODELS
- IMPACT MODELS
- DECISION MODELS

Adapted from Steinitz “A Framework for Geodesign”
Paired Model Courses

Models I
Evaluation & Decision
- REPRESENTATION MODELS
- PROCESS MODELS
- EVALUATION MODELS
- CHANGE MODELS
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- DECISION MODELS

Models II
Process & Impacts
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Models III
Representation & Change
- REPRESENTATION MODELS
- PROCESS MODELS
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- DECISION MODELS

Adapted from Steinitz “A Framework for Geodesign”
Model I: Evaluation & Decision

Pedagogy

- Work as a team
- Read relevant case studies and methods
- Role play stakeholders
- Provide a set of givens and assumptions (i.e. representation, process, change, and impact models)
- Derive measurable indicators that are pertinent to the decision and evaluation of the study
The Project
Project

- Tennessee Department of Transportation (TDOT) study of the proposed roadway improvements to the Ocoee River Gorge Section of Corridor K.
- 24-mile section of US 64.
- The Corridor K project is needed to:
  - Improve roadway deficiencies
  - Address unique safety issues that have not been addressed...
  - Support or enhance local and regional transportation networks.
  - Enhance sustainable economic growth in the region.

Materials courtesy of TDOT, Project courtesy of J. Sipes
Materials courtesy of TDOT, Project courtesy of J. Sipes
Geo-dispersed Team

The Collaboration
Online Collaboration

Asynchronous Toolbox

- Canvas – Course Lessons and Content
- VoiceThread – Presentations & Peer Review
- MindMeister – Hosted White Boarding
- ArcGIS Online – Shared maps
- GeoPlanner – Evaluating Design Scenarios
The Course
Course Delivery

- Lessons and Activities
- Discussions and Announcements
# Course Schedule

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<th></th>
<th>MON</th>
<th>TUES</th>
<th>WED</th>
<th>THUR</th>
<th>FRI</th>
<th>SAT / SUN</th>
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<td>New lesson overview available online</td>
<td>Mid-week instructor check-in of Yammer discussion</td>
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<td>Student work on lesson assignment individually or collaborate on team assignment</td>
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<td>Assignment Due @ 8:00pm</td>
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Course Schedule

• Week 1 – Environmental Adaptability
• Week 2 – Scoping Case Project
• Week 3 – People of the Place
• Week 4 – Community Values
• Week 5 – Mapping Values
• Week 6 – Evaluating Values
• Week 7 – Doing the Math
• Week 8 – Synthesize the Method & Reflection
Course Schedule

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Scoping Case Project

Materials courtesy of TDOT

Based on enrollment
Scoping Case Project
People of the Place

7 Core Principles of Human Change

1. Most people resist change if they don’t believe it is necessary or worth upsetting the status quo.
2. Since change is inevitable, the most successful human systems are those built to adapt to change.

Materials courtesy of TDOT, L. McElvaney and K. Foster
People of the Place:

- Business Owners
- Outdoor Recreationists
- Conservationists
- Commuters
- Truckers
- Residents

Role Play leads to:

Refine scoping leads to:

- Representation Models
- Process Models
- Evaluation Models
- Change Models
- Impact Models
- Decision Models
People of the Place

Role Play

- Business Owners
- Outdoor Recreationists
- Conservationists
- Commuters
- Truckers
- Residents

Spaces with local significance

Technique by R. Hester.
Mapping Values

Materials courtesy of TDOT, D. Walker and Orton Foundation
Mapping Values

+ Classify Indicators

- Spatial
- Temporal
- Qualitative
- Quantitative
- Scientifically based
- Judgmentally based
- Legal standard

Technique by Placeways and Orton Foundation
Mapping Values
Synthesize the Method

Specify a method from any case study

Materials courtesy of TDOT, D. Walker, Placeways, and Orton Foundation
Synthesize the Method
Results

Challenges

• Project complexity vs. enrollment
• Lead / lag issues for collaborations and peer reviews.
• Reserve time in your schedule for online classes.
• Inconsistent interface of online tools.

Future Course Offerings

• Utilize Scenarios in GeoPlanner for evaluating change.
• Revised scope of case project per enrollment.
• Develop a shared final deliverable.
Thank You!

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