

ARCHITECTURAL THEORY RESEARCH PROJECT

ARC 4520 | Architectural Theory | Prof. Brandon Ro, AIA, NCARB, ICAA

REQUIREMENTS

PURPOSE

The Research Project is designed to demonstrate each student's ability to engage in research about an aspect of architectural theory and its relationship to contemporary practice. In this context, architectural research is defined as an inquiry or investigation conducted by a student that makes an original intellectual or creative contribution to the discipline. The ultimate deliverable for the research project will be to compile and synthesize the findings in a visual format as a poster presentation or a creative project.

RESEARCH PROJECT TOPICS

Students will select a topic from the weekly readings. Since each student will serve as a discussion leader for one of the weekly topics, they may consider using the same topic for their research project. Possible research topics include:

- Approaches to Architectural Education
- Venustas: Beauty and Judgment
- Venustas: Proportion and the Body
- Firmitas: Tectonics and Structure
- Firmitas: Materials and Craft
- Utilitas: Form and Function
- Utilitas: Use and Typology
- Making: Composition and Order
- Making: Imitation and Invention
- Making: Complexity and Simplicity
- Place: Context and Environment
- Place: Tradition and Newness
- Ethics: Authenticity and Deception
- Time: Memory and the Zeitgeist

Other topics may be selected outside of this list if approved in advance with the instructor.

ASSESSMENT

Each student will follow several steps over the course of their research project. The eight steps in this process and their respective assessment are broken down as follows:

THEORY RESEARCH PROJECT

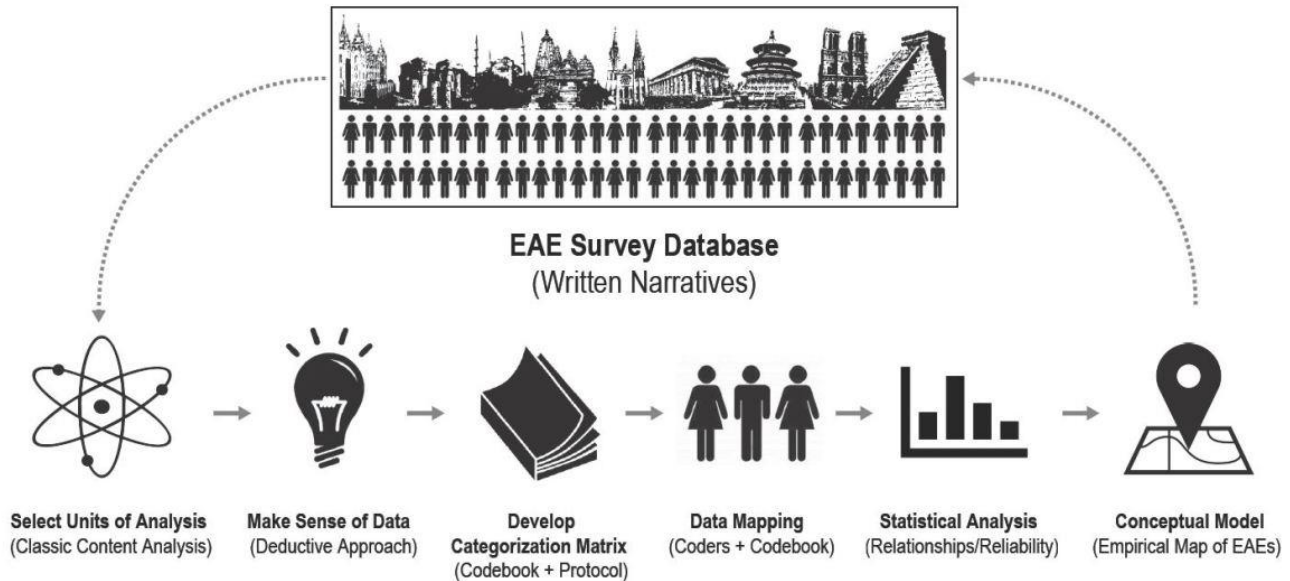
- 1) Theory Research Topic Selection
- 2) Annotated Bibliography

40%

5 pts

20 pts

3) Research Outline	20 pts
4) Research Abstract – Rough Draft	10 pts
5) Research Abstract – Final (Submit to UCUR)	40 pts
6) Poster Presentation – Concept Sketches	5 pts
7) Poster Presentation – Rough Draft	100 pts
8) Poster Final Submission and Presentation to Class	200 pts
Total	400 pts



RESEARCH PROCESS

STEP 1: THEORY RESEARCH TOPIC SELECTION

As part of their theory research topic selection, each student must decide if they will be presenting their research as either a poster presentation or as an oral presentation. Students will

POSTER PRESENTATION

If the architectural theory research is pursued as a poster presentation, the format will typically convey the research in a visual format. The maximum poster size is 40"x46" and should include the research abstract. A poster can also include visual elements such as charts, graphs, diagrams, photos, drawings, etc. These visual graphics can help illustrate the research question, the relevant scholarly context, research methodology, conclusions, or expected results. Examples of poster type projects might include case study comparisons between architectural styles, formal geometric and proportional analysis of a particular architect's buildings, survey type research about beautiful buildings, etc.

ORAL PRESENTATION

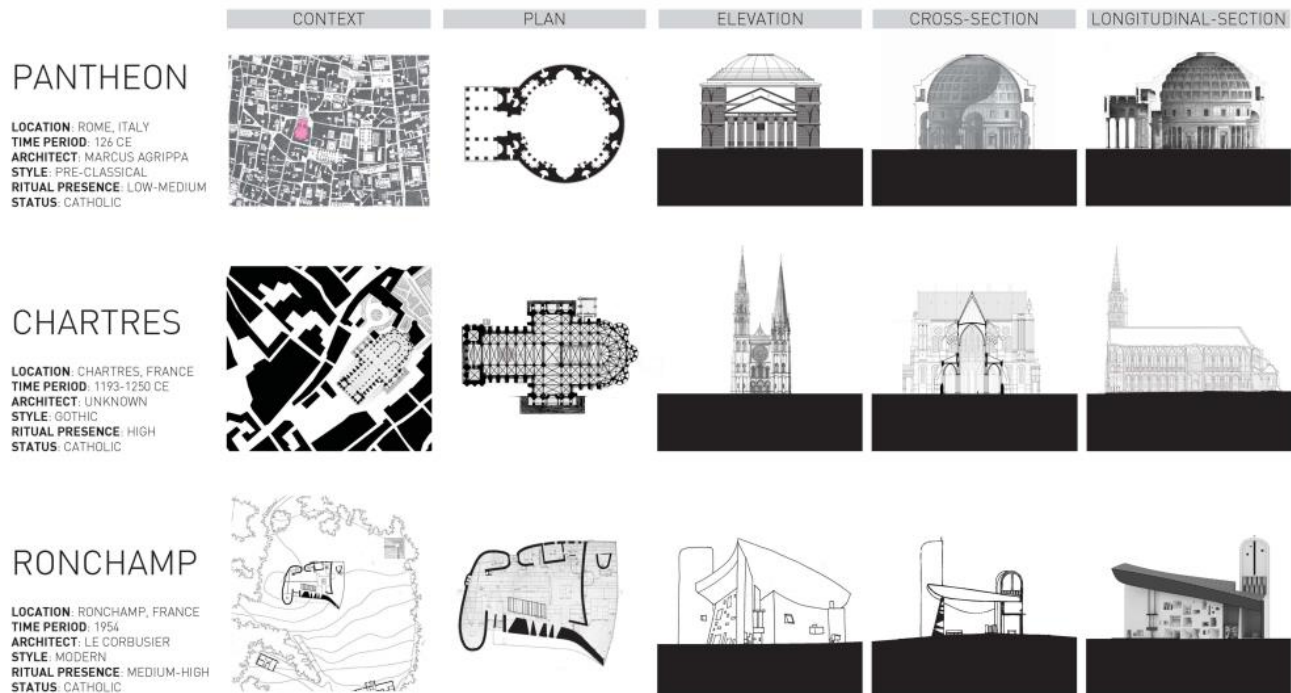
If the architectural theory research is pursued as an oral presentation, students will share their project as a traditional presentation where they will share their research findings or project to an audience using slides or other visual aids. Typically, each presenter is allotted a specific time slot for their talk which is followed by a question-and-answer session. The Typical presentation time is a 10-12 minute presentation with 3 minutes for Q&A. As part of the class requirement, students will still produce a poster summarizing their research project if they choose the oral presentation format for the conference.

After each student has selected the method they will present their research, they will submit a **Preliminary Statement** about their proposed project topic (1 typed paragraph up to a 1/2 page). This Preliminary Statement should include a thesis statement of what the student wants to explore with several key points or ideas that will be addressed. The Statement should also mention some of the sources that the student plans to include in their research. The instructor will review these statements and return them with comments and suggestions.

Submit your research topic selection as a Microsoft Word document to Canvas. The instructor will review and provide feedback.

RESOURCES

<https://www.uvu.edu/writingcenter/handouts/index.html>



STEP 2: ANNOTATED BIBLIOGRAPHY

After you have selected your research topic, the next step is to start gathering information about your topic. One means of documenting your research process and the sources you come across along the way is to create an annotated bibliography. Typically an annotated bibliography is prepared in advance of a research project or paper. A typical annotated bibliography consists of two main things:

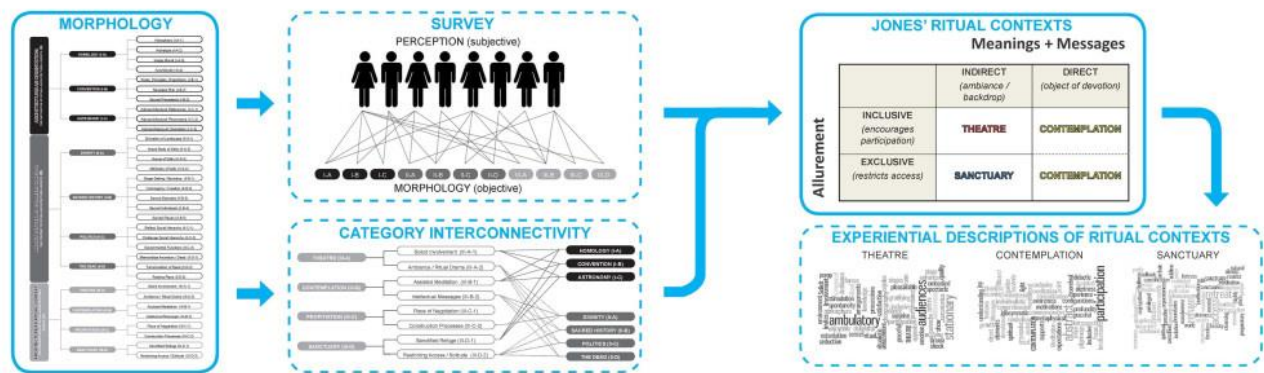
- 1) **Citation:** Each source reference will be formatted in a particular bibliographic style (e.g., MLA, APA, Chicago). This is similar to a bibliography or works cited at the end of a research paper.
- 2) **Annotation:** An annotation is a brief summary of the source's content and also includes an evaluation of the points raised by the author, such as the quality of the evidence, their relevance, the author's credibility, and its value to your research project. This is usually three to four sentences in length.

Each student will create an annotated bibliography for the sources they come across for their research project and submit this as a PDF to Canvas. The annotated bibliography must include a minimum of five (5)

sources. Each source citation will be in Chicago style. After the source citation, students will also include a written annotation that summarizes and evaluates the source for their research.

Below is a link to a UVU guide for writing Annotated Bibliographies with examples:

<https://www.uvu.edu/writingcenter/handouts/index.html>



STEP 3: RESEARCH OUTLINE

Before you start compiling your research poster and your abstract, it is always useful to make an outline of your ideas. Now that you have decided on your research topic and created an annotated bibliography of your sources, you are ready to prepare an outline. An outline is simply a way to organize your ideas and information. The example below is an abbreviated version of what is often referred to as a formal or “traditional” outline. It is based on the five-paragraph essay model and can be expanded or condensed to fit the scope of your essay, research paper, or project.

Submit your research outline as a Microsoft Word document to Canvas.

SAMPLE RESEARCH OUTLINE

At a minimum an outline should include the following items:

TITLE (Creative Title of Research Paper)

- 1) **INTRODUCTION**
 - a) Background
 - b) Thesis Statement
- 2) **BODY**
 - a) **First Topic**
 - i) Point A
 - (1) Supporting Evidence
 - (2) Supporting Evidence
 - (3) Explanation
 - (4) So What?
 - ii) Point B
 - (1) Supporting Evidence
 - (2) Supporting Evidence
 - (3) Explanation
 - (4) So What?
 - b) **Second Topic**

- i) Point A
 - (1) Supporting Evidence
 - (2) Supporting Evidence
 - (3) Explanation
 - (4) So What?
 - ii) Point B
 - (1) Supporting Evidence
 - (2) Supporting Evidence
 - (3) Explanation
 - (4) So What?
- c) **Third Topic**
 - i) Point A
 - (1) Supporting Evidence
 - (2) Supporting Evidence
 - (3) Explanation
 - (4) So What?
 - ii) Point B
 - (1) Supporting Evidence
 - (2) Supporting Evidence
 - (3) Explanation
 - (4) So What?
- 3) **CONCLUSION**
 - a) Summarize the main points of your paper and restate your thesis statement in fresh words
 - b) Make a strong/memorable final statement

DEFINITIONS

- **Introduction** = Create a strong opening statement(s) for your paper that generates interest and engages the reader. The Thesis Statement (TS) will be the last 1–3 sentences of the introduction.
- **Supporting Evidence** = Integrate an appropriate example, quotation, paraphrase, statistic, case study, or other evidence to support your topic sentence.
- **Explanation** = Explain how this evidence supports your topic sentence. Try to develop your explanation in 2–4 sentences.
- **So What?** = What is significant or important about the ideas (topic sentence + evidence + explanation) in this paragraph? Remind your reader how all this information connects back to the TS.
- **Conclusion** = The Thesis Statement should be rephrased, rather than repeated verbatim, in the first 1–3 sentences of the conclusion. Avoid simply summarizing the main points in the conclusion: synthesize them. Then create closure for your paper.

Adopted from "Outline" from Ashford University

STEP 4: RESEARCH ABSTRACT - ROUGH DRAFT

After you have created your research outline, you are ready to create a rough draft of your research project abstract. An abstract is a short written description that summarizes the nature of your research project, its results, and highlights any interesting outcomes. You should write the abstract for a non-expert reader that is educated. Depending on the format you have chosen for your research project, your abstract will follow one of the following formats.

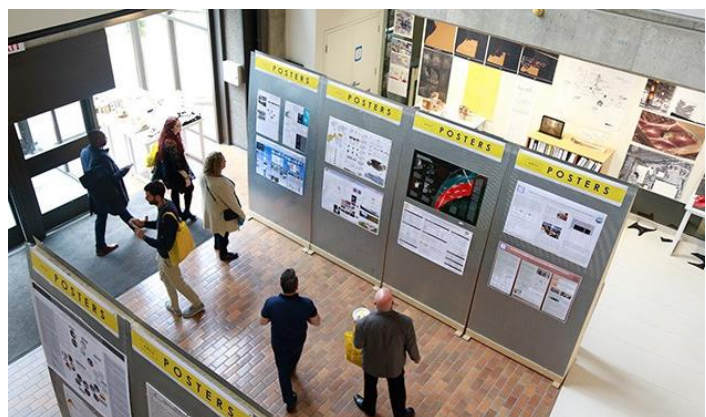
Your abstract submission for a **“Oral or Poster Presentation”** format must include the following:

1. **Clearly state the central research question and/or purpose of the project.** What is it that you wish to study? This could be a building typology (i.e. the energy consumption of single family homes vs. duplex units or efficiency of one floor vs. two floor office) or it could be the evolution of a building typology, building material, building system, building technology, a place or an architectural theory.
 2. **Provide brief, relevant scholarly or research context (no actual citations required) that demonstrates its attempt to make a unique contribution to the area of inquiry.** Describe why this research is relevant today. What has changed, is changing, or is likely to change in the future and how might this change effect people, place, design aspirations, building technology, etc.?
 3. **Provide a brief description of the research methodology.** How will you conduct the research (i.e. comparative, historic, evolutionary, inductive [analyze the observed phenomenon], deductive [verify an observed phenomenon], qualitative, experimental, simulation, case studies)
 4. **State conclusions or expected results and the context in which they will be discussed.** What do you expect the results to be or what do you expect to learn and what is likely to be the significance of your findings?
 5. **Include text only (no images or graphics).** We recognize this may be difficult when you are researching a “thing” in the built environment but do your best.
 6. **Be well-written and well-organized.** Follow the script you have been given (#’s 1, 2, 3, & 4 above in this order). Restate each topic and be specific in your response to each. Use complete sentences (bullet points can be used following a statement but never alone). Read what you have written out loud to check to see if it sounds clear and concise. Reread what you have written 24 hours later to identify typos, poor word usage, incomplete sentences, etc. Read what you have written to a friend and ask them if they can restate what you are proposing. If you are the least bit uncertain take what you have written to the writing center.
- **Abstracts should be no more than 300 words in length.**

Submit your rough draft research abstract as a Microsoft Word document to Canvas. The instructor will review and provide feedback.

Examples of Research Abstracts:

- Student Abstracts from past UCUR conferences (<https://www.ucur.org/>)
- Student Abstracts from past NCUR conferences (<https://ncur.secure-platform.com/a/gallery?roundId=5>)
- Previous UVU Architectural Theory abstracts (<https://www.uvu.edu/aed/architecture/architecture-news/posts/2021-ucur-conference.html>)
- Architectural Research Poster Abstracts from the 2013 ARCC Conference (see pp.725-743) https://brandonro.files.wordpress.com/2020/08/arcc2013_poster-abstracts.pdf



STEP 5: FINAL RESEARCH ABSTRACT – SUBMIT TO UCUR

After receiving comments and feedback from the instructor on your research abstract rough draft, you will proceed to finalize the research abstract for submission to the Utah Conference on Undergraduate Research (UCUR). The instructor for the course will serve as the faculty mentor and co-author for each student as they prepare their work for submission. In addition to the abstract submission requirements outlined below, each student will need to carefully follow the guidelines on UCUR's website when preparing their final abstracts (<https://www.ucur.org/>). Depending on the format you have chosen for your research project, your abstract will follow one of the following formats as before.

Your abstract submission for a **“Oral or Poster Presentation”** format must include the following:

- Same requirements as Step 4 above

Submit your final research abstract to Canvas as a PDF and word document. You will also need to submit this to UCUR's website (<https://www.ucur.org/>).

Note that when submitting to UCUR you will need to include the instructor's name and email on your submission and indicate what presentation type this will be (Oral Presentation OR Poster Presentation)

STEP 6: POSTER PRESENTATION – CONCEPT SKETCHES

Each student should compose three (4) thumbnail concept sketches for their poster presentation layout. Each thumbnail can be created in their sketchbook and will be a minimum of 3"x5" in size. Students should keep in mind the final poster presentation guidelines for UCUR below when composing their concept sketches (<http://ucur.org/presentation-guidelines.php>):

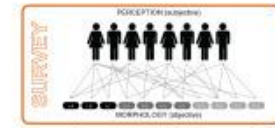
- Poster dimensions: up to 40" tall x 46" wide.
- Posters should not be thicker than standard poster weight (no foam core backing).
- Poster hanging materials (T-pins) will be provided.
- Posters must be readable from three feet away.
- Presenters must be available to discuss their poster during the entire session.
- Poster should include:
 - presentation title
 - student name
 - research advisor name
 - school
 - department

Please submit your poster presentation concepts as a scanned image in Canvas AND indicate which option you would like to select to further develop. This will be reviewed with the instructor.

Below is an example of a 24"x36" research poster layout.



THE IDEALIZED TEMPLE MORPHOLOGY: Surveying the Public Perception of Sacred Architecture



BACKGROUND
Throughout the global history of architecture, many cultures and regions have built sacred buildings and symbols/noments under the rubric of temples. In many instances, temple spaces have influenced the world's cultural identity in the spheres of politics, sociology, and religion. The power of architecture lies in its ability to shape human understanding. In other words, human perceptions are often transformed to some degree when people interact with architectural configurations. Not understanding the impact of the phenomenology of architecture on perception in such encounters is rather difficult to quantify because of the subjectivity of human experience.

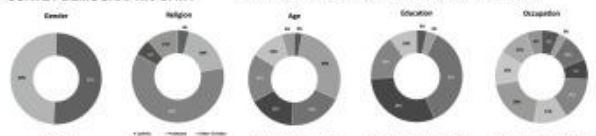
OBJECTIVES
In the following study, however, survey research is proving to be a viable method for:
1. testing the relevance and public reaction to conceptual models and theories of sacred architecture;
2. providing empirical and quantitative data documenting sacred architecture's effect on human understanding and perception; and
3. producing an idealized morphology or set of design strategies that can guide architects and religious specialists in the planning phases of new projects.
Overall, the study reports data gathered from over a hundred survey respondents from a convenience sampling (n=112) and serves as a preliminary attempt at ongoing research into whether focus on surveying the public perception of sacred architecture.

SURVEY METHODOLOGY
The survey was designed to first test the relevance of the theoretical framework of comparative religion of religion, Lindsay Jones, in his second volume of The Hermeneutics of Sacred Architecture (Cambridge, Harvard University Press, 2003). Jones' theory is derived from empirical case study observation, thus following the inductive approach to research by identifying patterns from the world's sacred architecture. On the other hand, since the survey tests Jones' theory, it can be viewed as a more deductive method. The survey deals with a different type of empirical observation, namely the quantification of people's subjective perceptions of sacred architecture.

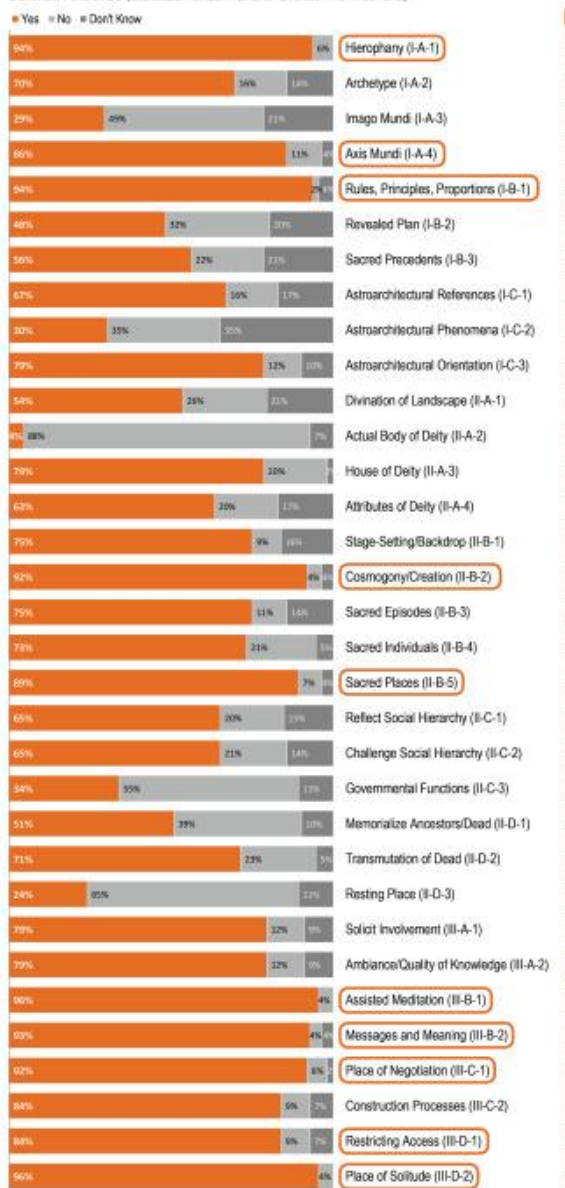
LIMITATIONS + FINDINGS
One limitation to the study is that there is a potential bias in the data, since a large number of respondents (60%) agreed that a space or building can be sacred and have meaning. While this may be the case, the fact that there was such a high average acceptance rate (70%) for Jones' theory (i.e., trans-architectural premises), despite the differences in gender, age, education, religion, and occupation, helps validate the significance and value of the results for both designers and religious specialists.

Another limitation to the survey is that respondents do not comprise a scientific sample of a particular population demographic, notwithstanding this limitation. However, the descriptive statistics of the survey data not only provide us with a preliminary attempt at surveying the public perception of sacred architecture but also provide us with the top ten most important design strategies for temple projects. One potential for the future use of the survey is how it can better gauge a client's (i.e., clergy, congregation, etc.) perceptions and desiderata of sacred architecture during the initial planning stages of design and then compare that data with post-occupancy evaluations to determine the transnarrative quality of the new ritual space on human perception.

SURVEY DEMOGRAPHIC DATA



SURVEY FINDINGS (IDEALIZED PERCEPTIONS OF SACRED ARCHITECTURE)



TOP 10 DESIGN STRATEGIES

- Assisted Meditation, III-B-1 (96%)**
"A temple's architecture or features can help a person meditate or concentrate."
Concepts: path, object of devotion
Case Study: Labyrinth / Rose window, Chartres Cathedral (Christian)
- Place of Solitude, III-D-2 (96%)**
"A temple restricts its access in order to help keep it separate and sacred."
Concept: retreat, sanctuary, fortress
Case Study: Mont Saint-Michel, France (Christian)
- Hierophany, I-A-1 (94%)**
"A temple represents sacredness."
Concept: representation, sacred place, manifestation
Case Study: Buddhist Stupa at Sanchi
- Rules, Principles, Proportions, I-B-1 (94%)**
"An architect uses rules, principles, or proportions in the design of temples."
Concept: sacred geometry, order, harmony
Case Studies: Vitruvian Man - Leonardo da Vinci; Ideal City for Hangzhou, China
- Messages and Meaning, III-B-2 (93%)**
"The temple's architecture or features communicate messages or meanings."
Concept: myth, symbolism, narrative
Case Study: Benbulbin Buddhist Temple
- Cosmogony / Creation, II-B-2 (92%)**
"The design of temples can honor the creation of heaven and earth."
Concepts: first place of creation, sacred mountain
Case Study: Angkor Wat Temple Complex (Hindu)
- Place of Negotiation, III-C-1 (92%)**
"A temple is a place of prayer or negotiation with God(s) (i.e. intercession, covenants, contracts)."
Concepts: sacrifice, altar, prayer
Case Study: Ise Shrine, Japan
- Sacred Places, II-B-5 (89%)**
"The temple's architecture can honor sacred places (i.e. Garden of Eden, heaven, Calvary, Mecca, Zion)."
Concept: site location, mythic place, orientation
Case Study: Jerusalem Temple (Judean)
- Axis Mundi, I-A-4 (86%)**
"The temple's location is a sacred gathering place or axis (i.e. ceremonial center)."
Concept: vertical link between worlds, centralized plan
Case Study: Papal Altar, St. Peter's, Rome, Italy
- Restricting Access, III-D-1 (84%)**
"Temples can provide a place of solitude, retreat, and refuge."
Concept: thresholds, gradations of space
Case Study: Temple Khnoum (Ancient Egypt)

STEP 7: POSTER PRESENTATION – ROUGH DRAFT

Each student should develop the concept sketch they selected for their rough draft of their poster presentation. Students should keep in mind the final poster presentation guidelines for UCUR below when composing their rough draft (<http://ucur.org/presentation-guidelines.php>):

- Poster dimensions: up to 40" tall x 46" wide.
- Posters should not be thicker than standard poster weight (no foam core backing).
- Poster hanging materials (T-pins) will be provided.
- Posters must be readable from three feet away.
- Presenters must be available to discuss their poster during the entire session.
- Poster should include:
 - presentation title
 - student name
 - research advisor/mentor name
 - school
 - department

Please submit your poster presentation rough draft as a PDF, high resolution scanned image, or high resolution photo with minimal perspective (if your project is a creative project, like a watercolor, model, etc.) in Canvas. Instructor will provide feedback.

STEP 8: FINAL POSTER PRESENTATION – PRESENT TO CLASS

Each student should incorporate any feedback received from the instructor on their rough draft. Continue to finalize the poster presentation and follow the poster presentation guidelines for UCUR below:

- Same requirements as Step 6 & 7 above

Please submit your final poster presentation as a high quality PDF, high resolution scanned image, or high resolution photo with minimal perspective (if your project is a creative project, like a watercolor, model, etc.) in Canvas. Treat this as your studio portfolio submission.

Each student will have five (5) minutes to present their architectural theory research poster or creative project to the class. If your poster presentation or creative project is accepted for presentation at UCUR the instructor will work with you to prepare for the conference.