



MERCER
COUNTY COMMUNITY COLLEGE

COURSE OUTLINE

| Course Number | Course Title | Credits |
|-----------------------------|--|-----------------------------------|
| ARC 121 | Architecture Basic Design I | 5 |
| Hours: Lecture/Lab/Other | Co-requisite | Implementation Semester & Year |
| 1 lecture/8 studio per week | ARC 102 Graphic Communication Architecture | Fall 2022 |

Catalog description:

Explores fundamental principles and elements of design: form, space, composition, systems, context, imagery, functional and fundamental organizations. Solutions to architectonic design projects explored through critical analysis, sketching, process drawings and study models. Traditional and digital media tools are used as a means of communicating architectural ideas. **Fall Offering.**

General Education Category:

Not GenEd

Course coordinator:

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Required texts & Other materials:

Francis D.K. Ching, Architecture: Form, Space, and order,
ISBN: 978-1-118-74508-3
Edition / Copyright: latest
Publisher: John Wiley & Sons, Inc.

Unwin, Simon, Analyzing Architecture,
ISBN: 978-0-415-48928-7
Edition / Copyright: latest
Publisher: Routledge

Recommended text:

Mo Zell, Architectural Drawing Course: Tools and Techniques for 2D and 3D Representation
ISBN: 978-076-413-8140
Edition / Copyright: latest
Publisher: Barron's Educational Series, Inc

Information resources: In addition to reference books listed above, additional books, periodicals, and other print materials are available in the College library, in local libraries, and/or in the freshman architecture studio.

Course Student Learning Outcomes (SLO):

The National Architectural Board (NAAB) requires that students in architecture programs are evaluated through NAAB STUDENT PERFORMANCE CRITERIA. Mercer County Community College uses the NAAB criteria in the creation and assessment of student performance.

Upon successful completion of this course the student will be able to:

1. Knowledgeably employ the various stages of the creative thought process (including critical thinking skills) in the task of producing an architectural design. [Supports ILG # 1, 3, 4, 5, 7, 8, 9, 10, 11; PLO # 1, 2, 4, 5, 6, 8]
2. Analyze a given architecture project statement and identify the specific issues that need to be addressed. [Supports ILG # 1, 3, 4, 5, 7, 8, 9, 10, 11; PLO # 1, 2, 4, 5, 6, 8]
3. Develop a concept (hypothesis) and, through an iterative and reflective design process, produce design strategies (partis) that support/express the concept and translate it into physical form. [Supports ILG # 1, 2, 3, 4, 5, 7, 8, 9, 10, 11; PLO # 1, 2, 4, 5, 6, 8]
4. Use as tools for thinking and representation a combination of traditional and digital drawing and modeling techniques [Supports ILG # 1, 2, 3, 4, 5, 7, 8, 9, 10, 11; PLO # 1, 2, 4, 5, 6, 8]
5. Utilize model-building techniques to produce study models and presentation models. [Supports ILG # 1, 2, 3, 4, 5, 7, 8, 9, 10, 11; PLO # 1, 2, 4, 5, 6, 8]
6. Make a verbal and visual (2-dimensional and 3-dimensional) presentation of his/her work. [Supports ILG # 1, 2, 3, 4, 5, 7, 8, 9, 10, 11; PLO # 1, 2, 4, 5, 6, 8]
7. Read, write, and listen actively, critically, and reflectively. [Supports ILG # 1, 3, 4, 5, 7, 8, 9, 10, 11; PLO # 1, 2, 4, 5, 6, 8]
8. Recognize, analyze, and assess historical and contemporary works using accepted approaches and criteria. [Supports ILG # 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11; PLO # 1, 2, 4, 5, 6, 8]
9. Assess and evaluate their work and that of their peers. [Supports ILG # 1, 3, 4, 5, 6, 7, 8, 9, 10, 11; PLO # 1, 2, 4, 5, 6, 8]

Course-specific Institutional Learning Goals (ILG):

Institutional Learning Goal 1. Written and Oral Communication in English. Students will communicate effectively in both speech and writing.

Institutional Learning Goal 2. Mathematics. Students will use appropriate mathematical and statistical concepts and operations to interpret data and to solve problems.

Institutional Learning Goal 3. Science. Students will use the scientific method of inquiry, through the acquisition of scientific knowledge.

Institutional Learning Goal 4. Technology. Students will use computer systems or other appropriate forms of technology to achieve educational and personal goals.

Institutional Learning Goal 5. Social Science. Students will use social science theories and concepts to analyze human behavior and social and political institutions and to act as responsible citizens.

Institutional Learning Goal 6. Humanities. Students will analyze works in the fields of art, music, or theater; literature; philosophy and/or religious studies; and/or will gain competence in the use of a foreign language.

Institutional Learning Goal 7. History. Students will understand historical events and movements in World, Western, non-Western or American societies and assess their subsequent significance.

Institutional Learning Goal 8. Diversity and Global Perspective: Students will understand the importance of a global perspective and culturally diverse peoples

Institutional Learning Goal 9. Ethical Reasoning and Action. Students will understand ethical frameworks, issues, and situations.

Institutional Learning Goal 10. Information Literacy: Students will recognize when information is needed and have the knowledge and skills to locate, evaluate, and effectively use information for college level work.

Institutional Learning Goal 11. Critical Thinking: Students will use critical thinking skills understand, analyze, or apply information or solve problems.

Program Learning Outcomes for the Architecture (PLO)

1. Use analytical skills to determine the major elements of a work of architecture and/or an architectural design project.
2. Comprehend and apply the various stages of the creative thought process to produce an architectural design.
3. Understand and apply the basic principles of sustainable design.
4. Use two- and three-dimensional visual communication skills (freehand, traditional, and computer-generated drawings and physical models) to convey a complete architectural idea.
5. Demonstrate knowledge of the important buildings and stages in the history of architecture and the social and technological factors that influenced them.
6. Critically evaluate the built environment – its relationship to the natural world and the reciprocal sociological and psychological influences on man.
7. Demonstrate knowledge of architectural materials and structural systems and their appropriate applications in building construction.
8. Develop a professional portfolio to serve in the pursuit of further education and employment.

Units of study in detail – Unit Student Learning Outcomes:

Unit I Principles of Unity in Architecture Design

[Supports Course SLO # 1-9]

Learning Objectives

The student will be able to: [Supports Course SLO #; Supports ILG #]

- To understand three-dimensional form as a series of lines, planes, and volumes (x, y, z)
- Recognize the contrast between two-dimensional patterns and three-dimensional volumes of space.
- Discover through exploration how volumes of solid and void organize space.
- Express principles of unity in a three-dimensional composition
- Comprehend and apply the properties of form (shape, size, color, texture, position, orientation, visual inertia) to create a composition that expresses architectonic dialog.
- Analyze, identify, and respond to the parameters and geometric proportions of a given site/field.
- Comprehend and apply the principles of orthographic projection (plan and section) in hard - line and freehand architectural drawings.

Unit II Diagramming [Supports Course SLO # 1-9]

Learning Objectives

The student will be able to:

- Develop a graphic and verbal vocabulary for describing concepts, form and organizing principles of design.
- Develop a methodology for diagramming.
- Develop representation skills for the communication of ideas.
- Understand the basic elements of architecture and their relationship throughout history.
- Demonstrate the understanding of the basic architecture design.

Unit III Proportioning systems [Supports Course SLO # 1-9]

Learning Objectives

The student will be able to:

- To study formal composition of individual objects and groups of objects and investigate the application of basic forces present in composition.
- To investigate design and the defining of space/form as an additive process
- To practice craft in model making
- To learn about proportion and understand the nuances between overall, inherent and comparative proportions.
- To practice acknowledging dominant, subdominant and subordinate forms within a composition.

Unit IV Defining Architectonic Space – Continuity, Complexity, and Relativity [Supports Course SLO # 1-9]

Learning Objectives

The student will be able to:

- Discover through exploration basic issues of architectural design: simplicity and complexity, proportion and scale, and relationships of parts to the whole.
- Develop the ability to select and define a hypothesis (concept) and design strategy (parti) for investigating spatial complexity.
- Consciously (deliberately) manipulate the number, attributes and organization of architectural elements (floors, walls, and roofs) to create spatial compositions of relative complexity.
- Comprehend the difference between a hypothesis (concept) and the design strategy (parti) that leads to a direct expression of the concept.
- Communicate explicitly in words and diagrams the hypothesis (concept) and design strategy (parti) investigated and the discoveries made in the investigation.
- Utilize model building techniques to produce study models and presentation models.

Unit V Modes of Interpretation: Analysis, Transition, and Transformation [Supports Course SLO # 1-9]

Learning Objectives

The student will be able to:

- Analyze a given painting by looking at it critically
- Use analytic diagrams to express an understanding of these n=basic design issues and the formal organization of the composition
- Translate the 2-dimensional composition of the painting into 3-dimensional compositions of volumetric solids and voids
- Utilize the analyses of the painting to generate interpretations (hypotheses/concepts) and transformations (design strategies/partis) into 3-dimensional compositions of positive and negative space

- Discover, through a series of iterative, 3-dimensional studies, the relationship between the planes, volumes, shapes and interstitial spaces of the 3-d composition
- Write a one-to two page critical paper about the painting and its author
- Comprehend and apply the principles of orthographic projection and axonometric drawing in hard-line and freehand architectural drawings
- Utilize model-building techniques to produce study models and presentation models.

Unit VI Portfolio [Supports Course SLO # 1-9]

Learning Objectives

The student will be able to:

- Select work from all projects during the course of the semester that is representative of the student's best effort and development as a designer
- Compose the selected work into a cohesive and logically-ordered portfolio that includes traditional and digital representation

Evaluation of student learning:

Grading of Projects – 80% of course grade

IMPORTANT NOTE: All assignments and gathering of research will be completed outside of class time. Students are expected to devote at least 10 additional hours per week to this course beyond scheduled class meeting times.

All component stages of each project (including the final stage) are due at the date and time indicated at the outset of each stage. For the final stage of each project, a drop of one full letter grade will be given to a project submitted at the same specified hour at the next class meeting time. A project submitted after this late period will be reviewed, but will receive the grade of "F".

The grades of all projects except the last will be of equal value. The last project will have a value two times that of each of the preceding projects.

The student is responsible for his/her regular attendance, participation in studio discussions and reviews of student work, and for on-time submission of his/her work for discussion and evaluation.

The following statement is meant to clarify the evaluation criteria in studio work. Individual work will be graded in consideration of these criteria. Values of quality, aesthetics, etc., are based upon the instructor's judgment of the work produced, the effort employed, and the total result achieved.

Analytic Skills (25%):

- An ability to understand and identify the problem, its specific components, particularity, and constraints
- An ability to apply logic and intuition to discern possible strategies for resolving the major and minor issues that need to be addressed in the problem.

Synthetic Skills (25%):

- An ability to harmoniously satisfy and integrate all aspects of a problem (architectural program) through the development of an appropriate architectural concept and its expression in physical form as an architectural design.

Technical Skills (30%):

- An ability to discern and resolve the major problems inherent in the architectural design.
- An ability to produce a clear and explicit presentation of the architectural design, 2-dimensionally and 3-dimensionally, verbally and visually.

Participation and professionalism (20%)

- An ability to communicate effectively one – on – one with the course instructor and other students
- An ability to make productive contributions to the studio-learning environment through group interaction and sharing of ideas

The grade of “A” will be earned by students who demonstrate mastery of the essential objectives of the project, as well as demonstrating excellence in aesthetics and originality, and in completing course objectives and learning unit objectives with at least 90% accuracy.

The grade of “B” will be earned by students who demonstrate more than adequate mastery of the essential objectives of the project, as well as demonstrating a more than adequate level of aesthetics and originality, and in completing course objectives and learning unit objectives with at least 80% accuracy.

The grade of “C” will be earned by students who demonstrate adequate mastery of the essential objectives of the project, as well as demonstrating an adequate level of aesthetics and originality, and in completing course objectives and learning unit objectives with at least 70% accuracy.

The grade of “D” is undesirable and indicates a less than adequate mastery of the essential objectives of the project and a less than adequate level of aesthetics and originality, with a minimum level of completion of course objectives and learning unit objectives.

The grade of “F” will be earned by students who do not demonstrate achievement.

Professionalism

Professionalism refers to the degree of seriousness and commitment the student brings to his/her work in the course. It includes the willingness to practice patience, curiosity, determination, and thoroughness in exploring the many possibilities as they emerge in the natural course of the design process. It includes regular, on-time attendance in all lectures and studio classes, completing assignments on time, maintaining a course notebook, and contributing constructively to the overall demeanor and learning atmosphere of the lecture and studio.

It includes regular, on-time attendance in all lectures and studio classes, completing assignments on time, maintaining a course notebook, and contributing constructively to the overall demeanor and learning atmosphere of the lecture and studio. Notebooks: the student may want to maintain a notebook (3-ring binder) of all of the following: handouts from each class, notes taken in class, homework assignments, and research and note-taking done outside of class.

Grading of professionalism will reflect the student’s sincere effort to strive for, develop, and demonstrate the following specific criteria:

Contribution: To support the creative learning environment through excellence in behavior and attitude, individually and collectively.

Dedication: To the study of architecture, including the willingness to put forth the time and effort to search and explore, study, and analyze, and to develop and nurture the ability to imagine and create and follow-through to completion each design project.

Commitment: To embrace a sincere and open-minded attitude toward new ideas, approaches, and interpretations of what constitutes good architecture, including a new sense of aesthetics, structure and materials, construction, and technology.

Participation: To communicate effectively one-on-one with the course instructor and other students and to make productive contributions to the studio-learning environment through group interaction and sharing of ideas.