ACE MENTOR PROGRAM
ARCHITECTURE • CONSTRUCTION • ENGINEERING

CURRICULUM MODEL

DEVELOPED BY:
THE ACE MENTOR PROGRAM OF CHICAGO

This Curriculum Model provides a theoretical framework for the way one affiliate structured its program. Goals, sessions, and deliverables are broadly outlined. This is not intended to be the "official" ACE curriculum, as affiliates have flexibility to design their curriculum to suit their needs and purposes.

Developed in five phases of activities, the curriculum intends to identify primary components for the successful design of a building project, while ensuring that a breadth of knowledge is attained.

This model serves as a guiding set of principles by which the three primary industry disciplines are interwoven to address a comprehensive set of objectives.

Outline per Industry Disciplines:

ARCHITECTURE	**ENGINEERING**	**CONSTRUCTION**
Building & Site Design	Construction Type	Logistics
Architectural Tools	Material Studies	Cost Estimating
Design Elements	Loads & Forces	Scheduling
Creative Solutions	Analysis	Site Planning
Integrative Systems	Infrastructure	Coordination

Five Phases of Curriculum

PHASE 1	INTRO	***What is it?***	**EXCITE**	*Week 1-3*
Goals	Focus on learning the relationship between the three primary professional disciplines (Architectural, Engineering and Construction). Identify and communicate the various roles, processes, tools, interactions to achieve the end result from a project planning basis.			
Work Sessions	Interactive group sessions with mentors and students focusing on communicating new information.			
Deliverables	Links, resources, contact information			

PHASE 2	OBSERVE	***What does it look like?***	**SENSE**	*Week 3-5*
Goals	Focus of heightened sense of inquiry and critical perceptions about architectural research and conceptual elements. Exploratory tools and investigations related to movement, materiality, sunlight, acoustics, scale, space, density, boundaries, building typology, restrictive criteria and infrastructure. Other observations should also include affects related to landscape, engineering, construction and project management.			
Work Sessions	Understanding patterns of use, mapping, language, purpose, mechanics, identifying needs of users, site conditions			
Deliverables	Imagery, written text, collages, sketches, analysis and preliminary diagrams etc.			

PHASE 3	CREATE	***What are all the pieces?***	**APPLY**	*Week 6-8*
Goals	Develop the learning objectives from the inquiry of design elements into particulars of a project site. Instill the need for personal characteristics of private and public experiences into the creation of architectural space. Metaphors and schematic ideas should become impactful characteristics of expression. Consider site development, orientation, properties of construction and cost implications, volumetric restrictions, environmental impact and judgment.			
Work Sessions	Building block diagrams, study of form and space, exercises on craft, volumetric studies, structural concepts, study of materials, building typology and use, 2D and 3D sketching, group-oriented critiques.			
Deliverables	Sharpen drawing skills and usage of design tools, schematic design development of various building typology, 3D spatial inquiry, and user-specific criteria.			

PHASE 4	BUILD	***How does it go together?***	**INTEGRATE**	*Week 9-13*
Goals	Methods and tools from all disciplines crucial to the successful coordination of a building project. Focus will center on putting all of the pieces together and understanding the sequential characteristics and function of elements. Understand logistics, scheduling and project planning. Understanding patterns of use, mapping, language, purpose, mechanics, identifying needs of users, site conditions			
Work Sessions	Practice and develop skills of organization, coordination and execution of systems, preparation and review of design. Structural and architectural design coordination along with aesthetics and overall function.			
Deliverables	Plans, elevations, sections, models, 2D or 3D renderings.			

PHASE 5	RESULT	***How does it get communicated?***	**EXPRESS**	*Week 14-16*
Goals	Focus on tools needed to convey the design ideas, elements of construction.			
Work Sessions	Exercises on verbal and written communication, drawings, presentations.			
Deliverables	Presentation of materials, conveying project objectives, design and development.			

Models of Different Session Tracks

SESSION	GROUP 1	GROUP 2	GROUP 3
1	**Introductions**	**Introductions**	**Introductions**: Tour, etc. *Building examples for inspiration*
2	**Design Project Introductions**	**Roles in Project, Process**	**Roles in Project, Process** *Brainstorm types of buildings*
3	**Field Trip to Project Site** *Record site observations*	*Observe a building or space for elements, e.g. scale, density, materials, light, etc.*	**Inspiration:** *PowerPoint of buildings (World), Create preliminary proposal ideas*
4	**Gather Related Images/ Pictures, Start Scaling Exercise**	**Field Trip to Construction Site**	**Site Visit** Turner project in Chicago
5	**Site and Massing Models**	**Form & Space:** *Construct object/ building that reflects individual*	**Finalize Ideas** *Finalize building type & site* *Collect site photography*
6	**Develop Group Components for Big Massing, Start Image Boards**	**Sketching** *Sketches: outdoor/indoor space, piece of furniture* *Site observations and impact*	**Site Analysis, Massing** *Landscape architect guest, begin building design:* *Massing Sketches of building*
7	**Continue Massing Model, Image Boards**	**Topography/Vegetation, Noise, Sun** *Choose potential client, identify public need, create project*	**Concept Proposal** *Discussion of building concepts, integrate elements, MEP systems*
8	**Finish Massing Model, start drawings**	**Brainstorm & Select 4 Projects for Site:** *Group assignments*	**Analysis of Design** *Design Critique*
9	**Structural Exercise**	**Subgroup project work & Site Layout/Planning**	**Finalize Design**
10	**Break Bridges, Finish Massing, Start Drawings**	**Project Design Development** *Drawings to demonstrate space, structure & function*	**Details:** *Focus: small details of building, how spaces relate, interior design*
11	**Construction Site Visit**	**Site Visit:** *Develop engineering layout & outline of space*	**Begin Production** *Group interaction: Drawings & model construction*
12	**Construction Exercise, Logistics plan** *To be used in final presentation*	**Design Development** *Project team work, then project coordination*	**Production:** *Start all production meetings with group reports recapping progress*
13	**Production:** *Work in groups for final presentation*	**Final Production:** *Mentor Project teams, then project coordination with teams*	**Production**
14	**Production:** *Work in groups for final presentation*	**Final Production:** *Mentor Project teams, then project coordination with teams*	**Production**
15	**Practice for Final Presentation**	**Final Production:** *Mentor Project teams, then project coordination with teams*	**Finalize Production** *Finalize drawings & models, begin layout of boards*
16	Extra	Extra	**Presentation Skills Prep:** *Guest talks about proper presentation, students practice*