MAKE NO SMALL PLANS

"for they have no magic
to stir men's blood"

- Daniel Burnham
Architect of the Cleveland Group Plan of 1903

Cuyahoga Community College

Cuyahoga Community College

Proposed Architecture Programme:

Associates of Applied Science in Architectural Technologies

Christopher A. Lobas

NCARB Registered (National Council of Architectural Registration Boards, Washington, D.C.).

Architect: Ohio, Colorado, Utah, New York, Florida, and Texas.

Leadership in Environmental & Energy Design - Accredited Professional.

Master of Architecture, University of Detroit – Mercy.

Proposal: September 2015

Contents:

Program Rationale:

The U.S. Bureau of Labor Statistics states on its website that employment of architects is projected to grow 17 percent from 2012 to 2022, which is faster than the average for all occupations. Their study proceeds to state the necessity of architects for expansion of existing schools and universities, for the design of new facilities, for homes and offices, and especially for healthcare facilities to serve baby boomers.

Architects in the near future will be expected to have green and sustainable design firmly in their repertoire, as energy costs increase and groups and government agencies exert greater demand for exacting standards to preserve the environment.

Ohio's Department of Higher Education articulation guide has made strides for sustainable design, and has even included a number of Renewable Energy courses (the ORE series) in the core curriculum. Architectural coursework could include one or more of these core courses.

The American Institute of Architects keeps current economic data on each state, and these show a slow but steady increase in demand for architectural services, and, as follows, billings for these services and increase in demand for workers with these skills. (AIA.org). A recent search of the AIA's website reveals that Ohio firms are searching for no less than eight architectural technicians and project architects throughout the state. The local AIA chapter, AIA Cleveland, has anticipated growth and interest in the profession through the opening of their Center for Architecture and Design in the heart of the Playhouse Square district. The space will serve for meetings, administration, and public outreach to the community on the value of the profession.

Since 2014, modest increases in construction have created some growth in Northeast Ohio's architectural firms (Crain's Cleveland Business, Scott Suttell). Many local firms work nationwide, but those claiming major current projects generally have listed Ohio or regional projects first.

The numbers are solid, and point towards modest and measured increases in demand for new architectural expertise over the upcoming decade. The profession of architecture, in order to remain intact and in fact expand, must provide more diverse opportunities for educating those just starting, including a means to respond to the various levels of career commitment. The echelons of architectural practice once included a wider array of knowledge bases, more career paths, and even more pathways to licensure. Licensure pathways have been standardized, and licenses can now only be obtained through NAAB accredited schooling, a regiment of internship credits, and nearly forty hours of testing. But many architectural firms have needs for individuals who rely on more practical experience and less on academic rigor.

This is particularly problematic in northeast Ohio. A niche is not open, an opportunity awaits as yet unfulfilled. Certain individuals would prefer to learn as apprentices, to become architectural drafters rather than architects. These would contribute to architectural and design practices through their pragmatism and experience rather than through a theoretical, academic framework.

Enter: a dynamic two-year program in architecture at the Cuyahoga Community College. Although numerous two-year programs exist in the state of Ohio, none have been specifically designed in such a matter as to flexibly adapt to both the demands of the professional office and the direct transfer of credits to our state's universities. The program presented here does both. A student can complete the two year Associates of Applied Science in Architecture degree, and discover a vast array of options, doors opening to immediate career choices with local firms, and others open to paths of study with Ohio's five schools of architecture accredited by the National Architectural Accreditation Board. Verily, these students could venture further afield, to other states and even abroad. The program accommodates the option for one semester of overseas travel and study in Europe or the Caribbean.

The courses herein are built for maximum transfer to the local powerhouse in architectural study, Kent State University, but possess a broad enough range to potentially articulate with Ohio State University, Miami University of Ohio, Bowling Green University, and the University of Cincinnati. Other schools could be studied for transfer on a case-by-case basis. The courses are enumerated on the matrix herein, but broadly described below.

DESIGN:
The curriculum is centered around Design Studios. The second year studios are Foundations, and focus on developing technical abilities, analytical powers, critical thinking skills, and prowess in artistic representation. These qualities combined enable the architectural student to powerfully respond to the world around them, and forge new changes in the built environment. Field work is solidified as the point of beginning for design, framing both practical efforts and artistic inspiration. Design Studios work with existing real sites, which the students visit and study, and return to during the course of the project. Projects can include residential projects, adaptive reuse of existing buildings, sustainable design. The scale of work can vary from furnishing and detailing all the way to monumental projects and community design. The studios are intended to allow for a range of student performance, but to be rigorous enough to be acknowledged in Universities for transfer.

GRAPHICS:
Architectural Graphics, known in some curricula as Visual Communications, includes an introduction to freehand drawing of still-life, the landscape, and the human model, all in order to grapple with essentials of proportion and space relationships. Drawing in "plein air," outside, is emphasized. Students proceed from freehand drawings to work "on the boards," with the elementary drafting tools. Each learns the office method of perspective for exterior and interior views. Color theory fleshes out the coursework, and adds depth and life. A final project at each level includes a series of carefully drafted orthographic drawings and perspectives, along with a crisp, clean presentation model constructed in wood or cardboard.

Additional courses build on this manual foundation with two and three dimensional drafting and building information modeling (BIM), along with rendering and animation of the geometries created for the digital exploration and communication of design.

STRUCTURES and TECHNOLOGY:
These courses provide the technological background necessary to address the complexities of architectural design. Included in this sequence are mathematics, physics, building structures, and a course adapted from the Ohio common course renewable energy series, including a broad introduction to sustainable design.

ARCHITECTURAL HISTORY:
These courses create a sense of recognition and respect for the eras in architectural design that forged our own. Students see the societies and philosophies underpinning the design ideas, and the individuals who made the broadest impact on their times and places. The patterns of architectural style and technologies are revealed. Students see their place in this continuum and are inspired to create additional works of great wonder.

PROFESSIONAL PRACTICE:
The cooperative training course introduces students to the world of the architectural office, including the flow of architectural work, project delivery systems, contracts and documents, the interaction of principals, managers, contractors, consultants, and the service of clients. Students emerge from their coop experience better prepared for the professional world.

CORE COURSES:
These courses are drawn from the Ohio Higher Ed TAG (Transfer Assurance Guide) core, and are for the greater part already present in the course manual of Cuyahoga Community College. Included are mathematics, construction materials and methods, physics, a course in renewable energy, and writing composition courses including a course in technical writing with special emphasis on architectural and construction topics.

Courses for Ohio Accredited Architectural Programs:

Bowling Green University
College of Technology, Architecture and Applied Engineering

University of Cincinnati
College of Design, Architecture, Art, and Planning

Kent State University
College of Architecture and Environmental Design

Miami University
College of Creative Arts, Department of Architecture and Interior Design

The Ohio State University
Austin E. Knowlton School of Architecture

Also included herein:

University of Detroit - Mercy
School of Architecture

Bowling Green State University
College of Technology, Architecture, & Applied Engineering
Bowling Green, Ohio. (All data from bgsu.edu, 12 Sept. 2015).
4-year Pre-professional Bachelor of Science in Architecture Degree
2-year Professional (NCARB Accredited) Master of Architecture Degree

"The BGSU Architecture and Environmental Design programs pursue the **convergence of technical and liberal arts** to inspire and empower students to enhance the built environment.

The undergraduate architecture major is a pre-professional degree focused on sequences of architectural design studios, complemented by history and theory courses, structures, materials and building systems courses. Students will also learn about how architecture relates to urban design, interior architecture, and sustainability and the environment. The major results in a four-year Bachelor of Science in Architecture degree."

YEAR ONE and TWO

GSW 1120 – Academic Writing
Basic expository writing; emphasis on organizing and developing coherent essays of at least 800 words for college-educated audiences.

MATH 1230 – Math for Architects and Construction
Includes unit conversations, geometry, trigonometry of angles, laws of cosines and sines, solving triangles, vectors, analytic geometry, conceptual introduction to differential and integral calculus. Book: Technical Mathematics for Calculus

MATH 1220 – College Algebra II Formulas, Arithmetic, Algebra, Geometry, and Statistics used to solve problems

PHYS 2010 – Basic Physics, with emphasis on Statics

CONS 2350 – Introduction to Construction Basic concepts of construction management and technology, including office organization, building construction techniques, surveying, building materials, plan reading and estimating.

ARCH 1050 – Design Representation 1
Fundamental freehand and machine-assisted drawing principles necessary to the investigation, visualization and presentation of design ideas. Drafting methods and techniques including the principles of orthographic projection, paraline and perspective drawing.

ARCH 2050 – Design Representation 2
Freehand and machine-assisted drawing principles necessary to the investigation, visualization and presentation of design ideas. Paraline and perspective drawing methods, shade and shadow, rendition of value and content, sketching and architectural presentation techniques. One hour of lecture and four hours laboratory.

ARCH 2020 – Design Studio I
Introduction to architecture and environmental design problem solving. Topics include anthropometrics, human-environment interaction, principles of form, style, order, proportion, scale and balance; concepts of programming and diagramming. One hour of lecture and four hours laboratory.

ARCH 2710 – 3D Digital Design
Intermediate course emphasizing the role of 3D computer applications, including parametric modeling and Building Information Modeling in architectural design, presentation, and professional practice.

ARCH 2360 – Environmental Systems
Mechanical and electrical building systems including review of scientific principles used in system design. Topics include equipment description and selection, system types, system components and basic design.

ARCH 2330 – Architectural History I
Ancient and medieval Western architecture and traditional non-Western architecture in cultural, aesthetic, and technical aspects.

ARCH 2340 – Architectural History II
Western architecture from renaissance to present and recent developments in global architecture in cultural, aesthetic, and technical aspects.

University of Cincinnati
College of Design Architecture Art and Planning
Cincinnati, Ohio. (All data from daap.uc.edu, 12 Sept. 2015).
4-year Pre-professional Bachelor of Science in Architecture Degree
2-year Professional (NCARB Accredited) Master of Architecture Degree

"The School of Architecture and Interior Design (SAID) at the University of Cincinnati prepares students for critical practice. Our students engage with the **principles, traditions, and requirements of building in all its aspects, interior and exterior.** Our goal is to advance the professions of Architecture and Interior Design by combining ethical judgment, creative research and technical proficiency in pursuit of excellence. We seek to nurture a life-long world view that recognizes the designer's responsibility to the environment, society, and the profession. Students are encouraged to take risks with their design ideas, and develop the skills to communicate them. The faculty and students of SAID strive to advance the discourse of environmental design, to respond effectively to change, and to integrate research with technical expertise."

YEAR ONE – SEMESTER ONE

SAID 1001 – Design Lab 1

This foundation design lab provides an introduction to design fundamentals including the principles of both two-dimensional and three-dimensional form, the importance of history and culture, the influence of materials and making. The studio also explores the analogical relationship between the human body and the built environment, and the concepts of spatial order and proportion. In addition to providing students with an introductory design vocabulary and compositional skills, these explorations serve to promote design-thinking skills.

SAID 1011 – Communication Skills 1

This course is linked with Communication Skills 1012 to complete a foundation course sequence of graphic communication involving media and techniques to provide students with a visual communication process. The two-course sequence is continued into the second-year experience and subsequent years in both architecture and interior design. Students are introduced to both digital and manual drawing. The overall pedagogical objective of the course is to allow students to develop their individual graphic communicative potential in: 1) comparing and analyzing various methods or means of communication and how these are influenced through the use of various media; 2) understanding the appropriate media for graphic communication to deliver specific design content and communication intent; and 3) developing individual techniques and skills necessary for effective graphic communication and image view selection. These skills include both traditional hand media and digital representation skills.

SAID 1031 – Human Dimension of Space

This is an introductory course on the discipline, field, and profession of architecture and interior design. The course provides a general overview of the field of architecture and interior design by particularly focusing on the processes, issues, and dynamics surrounding the production and experience of the built environment. Issues discussed include perception of space, ergonomics,

proxemics, gender issues, human factors in design, people-environment relations, environmental psychology, public-interest design, and socio-cultural factors in spaces. The course also introduces students to the discipline and profession of architecture and interior design by investigating disciplinary boundaries and crossover with other fields/disciplines and relates the profession to the larger context of the built environment.

Elective – Social Science

Elective – English Composition

YEAR ONE – SEMESTER TWO

SAID 1002 – Design Lab 2

This studio explores the analogical relationship between the human body and the built environment, and the concepts of order and proportion in two- and three-dimensional composition. These explorations serve as a basis for a series of exercises that strengthen both design vocabulary and basic compositional skills.

SAID 1012 – Communications Skills 2

Linked, as stated above

SAID 1021 – Modernism and Form

(not in Course Description)

SAID 1061 – Design Science 1

(not in Course Description)

PD 1021 – Intro to Co-op for Architecture

Elective – Humanities

YEAR TWO – SEMESTER ONE

SAID 2001 – Design Studio 1

This comprehensive, multidisciplinary studio introduces students of architecture and interior design to the methods and techniques of problem solving in building production at multiple scales of design intervention, emphasizing site considerations, building assemblies, spatial order, and interior environments. Emphasis is placed upon schematic design resolution with primary focus placed upon spatial order and sequence for a small building. For one semester, this studio serves as the primary hub for academic work in the School's two undergraduate programs, including Communication Skills, and Des Science 2. A single syllabus and program, developed by an interdisciplinary faculty, constellates these topics around the particularities of a strategically developed design problem, and then uses design to animate the relationship of these topics to appropriate forms and functions.

ARCH 3014 – Digital Media Skills

SAID 3071 – Structures
(not in Course Description)

ENGL 2089 – Intermediate Composition
Intermediate Composition provides students with an in-depth understanding of English theory and concepts, such as Elementary Education Language Arts and Reading.

YEAR TWO – SEMESTER TWO
Co-op Semester

The Professional Practice Program, also known as cooperative education or co-op, offers students an opportunity for selected practical experience purposefully intermingled with a gradually expanding academic background. This unique college program originated at the University of Cincinnati in 1906.

The cooperative education program provides 3.5 months of carefully planned professional practice assignments alternating with 3.5 month study periods. The Bachelor of Science in Architecture program includes three semesters (about one year) of co-op. The Master of Architecture program also includes three semesters of co-op.

The professional practice assignments assist each student in developing an understanding of human relationships and in learning to work with others as a team. Students' individual growth during this practice experience is enhanced by the realization that in addition to demonstrating theoretical knowledge they are learning to become an integral part of the working community and developing an awareness of the interrelationship between the academic and professional worlds.

Thus, during the college years, students obtain firsthand knowledge of professional practices, expectancies and opportunities. At the same time they are offered a realistic test of their career interests and aptitudes. Participation in the program enables students to make more intelligent selections of post-graduate positions. As graduates, their professional practice experience makes them more valuable to employers and increases their qualifications for more responsible career opportunities.

This course or similar may be of interest as an elective:

CLAS 365 - Seven Wonders of the Ancient World
A survey of the most important sites and monuments of ancient Greece, Mesopotamia, Israel, Turkey and Egypt. Critical thinking and oral communication skills will be applied in assessing the archaeological and textual evidence for the Seven Wonders of the Ancient World.

Kent State University
College of Design Architecture and Environmental Design
Kent, Ohio. (All data from kent.edu, 12 Sept. 2015).
4-year Pre-professional Bachelor of Science in Architecture Degree
2-year Professional (NCARB Accredited) Master of Architecture Degree

"The architecture program at Kent State University is dedicated to **developing responsible, professional architects committed to the improvement of the quality of life, the enhancement of the physical environment and protection of the public welfare** through the design of the built environment.

The program's professional values include reason, independent thought, productivity, honesty, integrity, justice, self-esteem, teamwork and mutual supportiveness. Within a balanced curriculum of technology, visualization, history, theory and design studio coursework, the program offers a platform for scholarship, constructive discourse and debate. Project-based learning activities are used throughout the curriculum. Problem definition, clarification and solution are present in the full spectrum of the program's activities and assignments. Required design studios exist in every semester of the program. The curriculum fosters experimentation, collaboration, discovery, critical and design thinking and innovation. The program inspires academic excellence and prepares students to be responsible and accomplished architectural professionals."

YEAR ONE – SEMESTER ONE
AED 10001 Design Thinking I
Provides a broad, interdisciplinary introduction to design culture and the visualization of ideas and information through observations of the object in space. Prerequisite: architecture (ARCH), architectural studies (ARCS) or interior design (ID) major.

AED 10101 Design Foundations Studio I
Introduction to the organizational principles and tools designers use to interpret and shape the built environment.

MATH 12001 Algebra and Trigonometry
Introduction to algebra and trigonometry including functions and graphs; polynomial and rational functions; exponential and logarithmic functions; angles and the trigonometric functions; graphs of trigonometric functions; trigonometric identities; inverse circular functions and trigonometric equations; and applications of trigonometry.

or **MATH 12011 Calculus With Precalculus I**
Introduction to differential calculus with a review of algebra and trigonometry. Includes exponents, factoring, functions, graphs, tangent lines, limits, continuity, derivatives and related rates.

US 10097 Destination Kent State: First Year Experience

Kent Core Requirement (Elective)

Kent Core Requirement (Elective)

YEAR ONE – SEMESTER TWO

AED 10002 Design Thinking II

Explores the role of design in society with a focus on purpose and meaning of form and space in relation to the human body.

AED 10102 Design Foundations Studio II

Introduction to the organizational principles and tools designers use to interpret and shape the built environment.

ARCH 10111 History of Architecture I

Global history of architecture from Neolithic times through the 16th Century.

MATH 12002 Analytic Geometry and Calculus I

Concepts of limit, continuity and derivative, and the indefinite and definite integral for functions of one real variable. Maximization, related rates, fundamental theorem of calculus

OR

MATH 12012 Calculus with Precalculus II

Development of integral calculus and continued study of differential calculus. Includes curve sketching optimization fundamental theorem of calculus areas between curves, exponential and logarithmic functions.

Kent Core Requirement (Elective)

Kent Core Requirement (Elective)

YEAR TWO – SEMESTER ONE

ARCH 20101 Second Year Design Studio I

The introduction of a building design process that emphasizes the integration of program requirements with specific form topologies using line and plane as the primary elements to provide shape and space.

ARCH 20112 History of Architecture II

History of architecture from the Medieval era through the 19th century.

ARCH 20601 Computer Applications in Architecture I
Course provides a basic understanding of two-dimensional CAD operations, parametric building design and building information modeling (BIM). Prerequisite: architecture (ARCH) or architectural studies (ARCS) or interior design (ID) major.

PHY 13001 General College Physics I
Principles of mechanics, heat and sound. Three-hour lecture, one-hour recitation.

AND
PHY 13021 General College Physics Laboratory I
Introductory lab to accompany PHY 13001

Kent Core Requirement (Elective)

YEAR TWO – SEMESTER TWO
ARCH 20102 Second Year Design Studio II
The introduction of a building design process that emphasizes the integration of program requirements with form typologies that are both influenced and informed by specific site context. Line and plane and primary configural shapes are again incorporated to develop building form solutions.

ARCH 20113 History of Architecture III
A history of 20th century architecture.

ARCH 20201 Beyond Western Architecture
Course introduces students to the broad realm of contributions to world architecture made by cultures and civilizations that were not in the traditional sphere of Western/European influence.

ARCH 20301 Introduction to Building Structures
An introduction to building structures, statics, strength of materials, analysis for shear-moment-displacement, loads including dead-live-wind-earthquake and building code requirements for structural safety.

ARCH 20602 Computer Applications in Architecture II
Principles and practices of 3D digital modeling and rendering, including: production of geometric surfaces and forms using polygon construction, texturing, lighting and rendering.

PHY 13012 College Physics II

Miami University
College of Technology, Architecture, & Applied Engineering
Oxford, Ohio. (All data from miamioh.edu, 12 Sept. 2015).
4-year Pre-professional Bachelor of Arts in Architecture Degree
Professional (NCARB Accredited) Master of Architecture Degree

"Consistent with the mission of the University and College of Creative Arts, it is our mission to **prepare students for global engagement as future architects and designers, and as citizens of an ever-changing and diverse world**. We strive to provide students rigorous professional preparation within the context of a nationally recognized liberal arts university; to embrace a culture of innovation grounded in an understanding of artistic tradition; and to promote engaged and critical inquiry in the pursuit of new understandings and new knowledge. We value the importance of personal values and a sense of responsibility to our global future as essential to positioning our graduates for leadership positions in a changing world."

YEAR ONE
ARC 101. Beginning Design Studio. (5)
and
ARC 102. Beginning Design Studio. (5)
Introduction to spectrum of influences which determine environmental form. Emphasis placed upon development of understanding and appreciation of our man-made environment. Methods of communication and development of visual vocabulary capable of understanding and expressing three-dimensional form and space emphasized. Open to majors only.

ARC 113. Methods of Presentation, Representation and Re-Presentation. (2)
and
ARC 114. Methods of Presentation, Representation and Re-Presentation. (2)
Introduction to various graphic media as tools of environmental design. Emphasis is placed on use and integration of traditional and digital media as tools of 3-dimensional analysis and synthesis in design process and representation. Includes orthographics, perspective, sketching, drafting, photography, rendering, and web design. Open to majors only.

ENG 111. Composition and Rhetoric. (3) (MPF)
Study and practice of effective explanatory, expressive, and persuasive writing. I.

ENG 112. Composition and Literature. (3)
Study and practice of effective explanatory, expressive, and persuasive writing in the context of an introduction to critical study of literature. Prerequisite: ENG 111.

Global Miami Plan Foundation course electives (6, 6)

YEAR TWO

ARC 201. Architecture Studio. (5)
and
ARC 202. Architecture Studio. (5)
Design of the environment as a creative process requiring a language and methods similar yet distinct from other arts. Design projects in man-made environment at different scales, and in natural and man-made environment interface. Introduction to paths in the environmental design curriculum and career opportunities. Open to majors only.
Prerequisite: ARC 101-102.

ARC 211. Introduction to Landscape and Urban Design. (3)
Introduction to principles and elements of the larger environment: landscape and urban design. Co-requisite for architecture majors: ARC 202; co-requisite waived for nonmajors.

ARC 212. Principles of Environmental Systems. (3) (MPF)
Understanding of the basic principles that inform the design of environmental and structural systems and their integration into building design. V. Co-requisite: ARC 211 and concurrent registration in ARC 201 or 203; co-requisite and prerequisite waived for nonmajors.

ARC 213. Graphic Media III. (2)
Introduction to the use of graphic media as tools of architectural design. Emphasis placed on the integration of traditional and digital media in the design process. Includes CAD, rendering techniques, perspective, sketching and modeling. Concurrent registration in ARC 201 or 203 required.
Prerequisites: ARC 113 and ARC 114.

ARC 214. Graphic Media IV. (2)
Introduction to the use of graphic media as tools of architectural design. Emphasis placed on the integration of traditional and digital media in the design process. Includes 3-D modeling and rendering software, advanced rendering techniques, perspective sketching and modeling. Concurrent registration in ARC 202 or 204 required.
Prerequisites: ARC 113, ARC 114, and ARC 213.

ARC 221. History of Architecture I. (3) (MPF)
Thorough and systematic survey of the history of architecture, urban design, and allied arts across global contexts. Non-majors welcome. IIA, IIB.

ARC 222. History of Architecture II. (3) (MPF)
Thorough and systematic survey of the history of architecture, urban design, and allied arts across global contexts. Non-majors welcome. IIA, IIB.

Global Miami Plan Foundation course electives (3)

Global Miami Plan Thematic Sequence (3)

Ohio State University
Austin E. Knowlton School of Architecture
Columbus, Ohio. (All data from knowlton.osu.edu, 12 Sept. 2015).
4-year Pre-professional Bachelor of Arts in Architecture Degree
Professional (NCARB Accredited) Master of Architecture Degree

"The Ohio State University was founded as a land-grant institution in the 19th century in response to the industrial revolution. At that time, the United States faced economic challenges that needed young professionals, particularly in agriculture and mining engineering, trained by institutions such as The Ohio State University. Gradually, the educational scope of land-grant institutions expanded to include the liberal arts with the understanding that this broadly based curriculum insures the informed citizenry upon which a democracy depends.

Today, the double heritage of utilitarian address and cultural mandate plays out in the curricula of the Knowlton School. We train young planners, landscape architects, and architects – professionals that are increasingly important in a world marked by scarcity, volatility and interconnectivity. However, the pedagogical legacy of the school is that professional training is necessary but not sufficient to this task. Each of our curricula includes technical subjects that are matched with history and theory classes to underscore the cultural implications of each disciplinary approach.

Design at Knowlton does not decorate an existing world, it proposes new worlds. At the undergraduate level, design shifts a liberal arts education from passive reception to active engagement. Our undergraduates act on what they know. At the graduate level, design combines technical expertise and conceptual breadth. Our graduates offer alternatives to outmoded conventions.

Clearly, the pressures to address real world situations are increasing. These pressures are economic (from irresponsible lending practices and income inequities), environmental (from resource depletion and population explosion), and political (as economic and environmental pressures destabilize governments). Yet this challenge is not new. It is reflected in our double heritage. On the one hand, there is the utilitarian requirement to respond to pressing demands – the industrial demands of agriculture and mining replaced by the post-industrial demands of agriculture, environment, and health. And, on the other hand, there is the cultural mandate to educate young professionals so that they contribute to our most profound aspirations, and in so doing, have the intellectual agility to address demands that will change as challenges are met and new challenges appear."

YEAR ONE – SEMESTER ONE

ARCH 1100 Survey

Introduction to the University, the Knowlton School of Architecture, and the disciplines of architecture, landscape architecture, and city and regional planning

ARCH 2300 Outlines of the Built Environment

Introduction to architecture, landscape architecture, and planning as cultural practices that shape the physical environment.

ARCH 2310 Introduction to Design

Introduction to the design of the physical environment through the exploration of form, space, and order using drawing and modeling techniques.

MATH 1148 College Algebra.

Functions: polynomial, rational, radical, exponential, and logarithmic. Introduction to right-angle trigonometry. Applications.

GE (General Elective)

YEAR ONE – SEMESTER TWO

ENGLISH 1110

Practice in the fundamentals of expository writing, as illustrated in the student's own writing and in the essays of professional writers.

PHYSICS 1100

(Not listed in course descriptions)

MATH 1118 Math for Architects

Topics in geometry for architecture majors

GE (General Elective)

GE (General Elective)

YEAR TWO – SEMESTER ONE

ARCH 2410 Architectural Design I

Architectural design with an emphasis on technique

ARCH 5610 Architectural Representation I

Introduction to architectural representation techniques

ARCH 5110 History of Architecture I

History of architecture from ancient to contemporary: historical inquiry, physical and cultural influences, theories, and analytical techniques.

GE Writing II

YEAR TWO – SEMESTER TWO

ARCH 2420 Architectural Design II

Architectural design with an emphasis on technique.

ARCH 5620 Architectural Representation II

Introductions to architectural representation techniques.

ARCH 5120 Architectural History II

History of architecture from ancient to contemporary: historical inquiry, physical and cultural influences, theories, and analytical techniques.

GE Literature

University of Detroit - Mercy
School of Architecture
Detroit, Michigan. (All data from udmercy.edu, 21 Sept. 2015).
4-year Bachelor of Science in Architecture Degree
5-year Professional (NCARB Accredited) Master of Architecture Degree

"Architects combine the creativity of an artist with the analytical mind of an engineer. **UDM educated architects exercise their capacity for aesthetic design and technical innovation in the service of their communities**, designing classrooms that help students learn better, building homes that use less energy, and preserving the great buildings of yesterday.

Studying architecture prepares students for an exciting and rewarding profession, but our curriculum can also prepare them to be designers in related fields, and to be very effective leaders and creative problem solvers. Studying architecture gives students great critical thinking skills that can translate to many potential careers, but if you stick with architecture you will be busy. It has been estimated that by 2050 we will need to increase our building stock in the U.S. by at least 50%. The opportunities for a rich life-long career in architecture have never been brighter."

YEAR ONE – SEMESTER ONE

ARCH 1100 Architectural Design I

The first semester is introductory, whose character is high energy, creative, reflective and enthusiastic. It is intended to introduce students to design concepts of form, space, composition, in two and three dimensions, and how they relate to human experiences. Students are introduced to the principles of design and the design process as a foundation for architectural design. Being the first studio course, the assumption is that the student comes with limited to no design or drawing skills.

ARCH 1110 Visual Communications I

The first course in architectural graphic analysis and presentation techniques. Students are introduced to basic techniques in freehand drawing and design illustration. The course stresses perspective drawing as a primary method for studying and representing three-dimensional shapes in two dimensions. Monochromatic graphic tools are used such as charcoal, pencil, pen and pastels.

ARCH 1190 Introduction to Architecture I
Introduction to Architecture is offered to first year architecture students to create awareness of the profession of architecture. The course looks at the history of the profession; how architecture is practiced in the United States; how the profession is changing; current issues with the architectural profession; the tenets of the American Institute of Architects; and ethical concerns facing a practitioner today. The course gives students a broad based background into architecture before they have an opportunity to be engaged in practice through cooperative education and subsequently internship after graduation.

ENL 1310 Academic Writing
Engages students in academic inquiry, research, and argumentation: designing research questions; locating, evaluating, and synthesizing secondary research; performing primary research to construct new knowledge; employing critical thinking strategies to develop arguments with purpose, meaning, and significance. In addition to exploring the influence of traditional print-based genres and rhetorical contexts, students will develop an awareness of how these contexts are likewise affected by emerging media. Prerequisite: Placement through SOAR, successful completion of ENL 130 (College Writing), or approved transfer of 3 credits of college composition.

MTH 1400 Elementary Functions
Study of functions, including polynomials; rational, algebraic, exponential, logarithmic and trigonometric functions. Computer laboratory included.

PHL 1000 Introduction to Philosophy
An introduction to philosophy through a consideration of such topics as the person, human values, freedom, morality, knowledge, death, the meaning of life, God, and the nature and destiny of human existence. Students come to understand that philosophy asks the most fundamental questions about ourselves, the world, and the relationship between the two. The method of philosophical thinking and critical reflection will be stressed. Note: This course fulfills Objective 4a of the University Core Curriculum.

YEAR ONE – SEMESTER TWO
ARCH 1200 Architectural Design II
Design II is intended to introduce students to design concepts directly related to the design of buildings and spatial experience. It is characterized by several short term, intense projects that introduce the student to the many scales and concerns of architectural design from the study of exterior spaces, to the programming of a space, to the detail of its constructability. It establishes the fundamentals of all aspects of architectural design- from posing initial questions, conceptualization and issues of realization, to materiality and constructability.

ARCH 1210 Visual Communications II
This course builds on the experiences from AR 1110. Color techniques are introduced such as pastels and watercolors. The subjects in this course range from still-life and architectural interiors to perspective presentation renderings. The complete sequence provides students with the visual language to analyze and communicate graphically various architectural concepts.

ARCH 1290 Introduction to Architecture II
A continuation of ARCH 1190: Introduction to Architecture I. The course continues the review of the profession, specifically the role of the AIA, the organization of architectural firms and alternative careers in architecture. It also discusses architectural technology and landscape in architecture.

ARCH 2130 Principles of Structural Behavior
An analysis of known structural systems in terms of spatial behavior in non-mathematical terms. The basic approaches to structure, proper scale of use and the effects of various materials, geometry and construction techniques are integrated into the course content. Illustrated lectures covering buildings from ancient to modern are used to demonstrate structural principles.

CST 1010 Fundamentals of Speech
Fundamental understanding of the process of oral communication with an emphasis on receiver behavior. Concentrates on basic oral communication competencies: idea phrasing, organization and support of ideas, audience analysis and adaptation, confidence, delivery skills, and speech preparation procedures.

Elective Natural Science

YEAR TWO – SEMESTER ONE
ARCH 1300 Architectural Design III
Design III is intended to transfer ideas explored in first year into their architectural applications while introducing students to the design of simple buildings and spaces as a creative integration of multiple systems i.e. concept, site, function, structure, mechanical systems, accessibility, materials and codes. The overall intent is to give students the opportunity to understand and explore in more detail how various systems inform, integrate and coordinate the design of architectural form and space. This term focuses on the issues of the integration of form and structure and the issue of materiality/constructability.

ARCH 2160 3D Computer Graphics
This course in computer aided design uses primarily Autodesk 3D Studio software. The emphasis is on visualization and design in three dimensions. Students learn how to assemble complex three-dimensional, digital architectural landscapes equipped with real-life attributes of light, building materials, etc. These objects are rendered and animated to facilitate the needs of the design process as well as complex graphic presentations. Additional post-processing and graphic software is introduced.

ARCH 2120 Architectural History and Theory I
An examination of the emergence and development of man's constructed environment from antiquity to the Industrial Revolution. This course examines various architectural traditions and traces the development of architectural form as an expression of social, religious, political and technological conditions.

ARCH 2330 Structures I
Analysis of structures. This course teaches the mathematical calculation of structures through lectures, and individual problem assignments. It focuses on resolution of forces; reaction; forces in frames and trusses; and forces in frames with beams. Also examined are characteristics of structural materials and structural components: shear and bending movements, flexural and shear stresses, combined stresses, principal stresses, combined bending and axial loads and stresses, deflection, continuity in structures. Light weight wood framing is presented as is wood as a structural material.

ARCH 2140 Ecological Design
This course introduces students to a broad range of strategies relevant to the design of sustainable environments. Topics include land consumption, climate and site analysis, site design, natural heating and cooling, building envelope design including earth sheltering, daylighting, water conservation, sustainable materials, active solar heating, and alternative energy sources. Lectures are supplemented by an integrated design and analysis project.

ARCH 2190 Introduction to Architecture III
This course is a continuation of the Introduction to Architecture sequence although the other courses are not prerequisites for this class. This course explores the relationship between architecture and its context with an emphasis on site analysis and design. Rural, urban, and suburban sites will be considered. The course will include some design assignments to ensure student's abilities with respect to issues such as topographic manipulation and parking design for example.

YEAR TWO – SEMESTER TWO
ARCH 1400 Architectural Design IV
Design IV is a continuation of studies begun in Design III. It is intended to further develop the student's ability to design buildings and building complexes within the context of integrated multiple systems. The issues of focus for this term include also sustainability, environmental systems and the design of a totally integrated project

ARCH 1160 Computer Graphics
An introduction to computer graphics. This course utilizes Autodesk's AutoCAD and Revit on IBM compatible hardware . The course stresses three dimensional digital modeling as a primary method of communication and design and includes elements of computer visualization techniques. Students acquire hands-on experience through a series of laboratory exercises and individual projects

ARCH 2220 Architectural History and Theory II
An examination of the development of architecture from the Industrial Revolution to present day. The course examines the fundamental themes underlying the creation of modern architectural form and relates them to developments in the other plastic arts. The course makes extensive use of slides and visual materials.

ARCH 2430 Structures II

This second course in structures focuses on principles of design of simple structures. Primarily studied are the design of beams, columns, trusses, built-up components and foundations in standard structural materials, steel and concrete. Related building construction techniques as well as lateral and seismic loading are also presented.

ARCH 2340 Environmental Technology I

Theory and application of building plumbing systems and of heating, ventilating, cooling, humidity control and fire protection. Emphasizes the effects these requirements have on architecture in terms of human comfort and health.

Courses for Competing Two-Year Architectural Programs in the State of Ohio:

Akron University
Certificate for Drafting and Computer Design Technology

Columbus State Community College
Associate of Applied Science in Architecture

Owens State Community College
Associate of Applied Science in Architectural Engineering Technology

Sinclair Community College
Associate of Applied Science in Architectural Technology

Terra State Community College
Associate of Applied Science in Architecture

Hocking College
Associate of Applied Science in Architecture

Stark State College
Associate of Applied Science in Civil Engineering Technology – Architecture Major

Central Ohio Technical College
Associate of Applied Science in Civil Engineering Technology – Architectural Technologies

Akron University
Akron, Ohio. (All data from akron.edu, 12 Sept. 2015).
Certificate in Drafting and Computer Drafting Technology
(Associate of Applied Arts no longer available)

"The certificate program in Drafting and Computer Drafting Technology is intended for individuals who wish to enhance or update their drafting skills. The program has been designed so that an individual can emphasize a specific area of drafting. All courses taken may be applied toward an associate degree in Drafting and Computer Drafting Technology. This certificate may be earned independent of any degree program."

122 TECHNICAL DRAWING II 3 credits
Prerequisite: 121, 210. Covers dimensioning; allowances and tolerances; geometric tolerance; threads and fasteners; descriptive geometry; intersections; developments; and computer applications. Laboratory.

150 DRAFTING DESIGN PROBLEMS 2 credits
Prerequisite: 2030:152. Introductory course in basic concepts in engineering technology computations. A study of technical terminology and applied mathematics.

180 INTRODUCTION TO CAD 1 credits
Drafting techniques using AutoCAD. Topics include drawing, editing, dimensioning, plotting, layers and text. Credit not applicable toward the AAS in Drafting and Computer Aided Drafting Technology. Laboratory.

200 ADVANCED DRAFTING 3 credits
Prerequisite: 122. Principles of descriptive geometry applied to practical problems pertaining to the civil and mechanical fields of technology. Laboratory.

210 COMPUTER AIDED DRAWING I 3 credits
Drafting procedures and techniques used for creating drawings using AutoCAD software. Topics include basic components, drawing, editing, dimensioning, layers, text, blocks, plotting, and hatch.

211 COMPUTER AIDED DRAWING II 3 credits
Prerequisite: 2940:210. Continuation of 2940:210. This course covers advanced topics in the use of AutoCAD. Those topics include UCS, VPoint, DView, wire frames, Boolean functions, customization, and AutoLISP. Laboratory.

230 MECHANICAL SYSTEMS DRAFTING 3 credits

Prerequisite: 122. Drawing fundamentals and terminology of welding, gears, cams, piping, sheet metal, and fluid power drawings. Laboratory.

240 ELECTRICAL & ELECTRONIC DRFTG 3 credits
Corequisite: 122. Drafting fundamentals, terms, and symbols required for electrical, electronics, and instrumentation drawings. Included are interconnecting diagrams, PC boards, and architectural and industrial plans. Laboratory.

245 STRUCTURAL DRAFTING 2 credits
Prerequisite: 121, 210 or equivalent. Duties of the structural draftsman in preparation of detailed working drawings for steel and concrete. Emphasis on portrayal, dimensions, and notes on a working drawing. Laboratory.

250 ARCHITECTURAL DRAFTING 3 credits
Prerequisite: 121. Drawing fundamentals, terminology, and symbols for developing a set of basic construction plans and details. Included also are presentation drawings and interior and exterior planning. Laboratory.

260 DRAFTING TECHNOLOGY PROJECT 3 credits
Prerequisite: Completion of 20 credits of 2940. Provides opportunity to research and develop a specific drafting project within chosen field of interest.

290 ST: DRAFTING TECHNOLOGY 1-3 credits
(May be repeated for a total of three credits) Prerequisite: permission. Selected topics on subject areas of interest in drafting technology.

Columbus State Community College
Austin E. Knowlton School of Architecture
Columbus, Ohio. (All data from cscc.edu, 12 Sept. 2015).
2-year Associate of Applied Science in Architecture Degree
(Five semesters of coursework)

"The Architecture program aims to prepare students for meaningful work in the profession and awards an Associate of Applied Science in Architecture degree and a transfer option. Certificate programs are also offered in Facility Management and 3-D Visualization**.**

The Architecture program focuses **not** on design theory, but on the job skills necessary to piece a building together and to develop the analytical descriptive drawings necessary for the project to be constructed. Associated areas of knowledge, such as building and zoning codes, building environmental systems, architecture history, and computer aided drafting skills are also stressed in the program."

YEAR ONE – SEMESTER ONE
ARCH 1111 Manual Drafting 4 Credits. Lecture: 1 hour – Lab: 6 hours
This course is intended to develop the skills of drafting especially for building construction and covers the use of lettering practices, line quality and weights, dimension procedures, orthographic projection, and the drawing of plans, sections and elevations.
Prerequisite: ARCH 1110 or permission of instructor
Lab fee: $18.00

MATH 1113 Technical Mathematics 5 Credits. Lecture: 4 hours - Lab: 2 hours
This is a technical mathematics course which covers rules for measurement; the study of rational expression arithmetic and simplification; operations on radical expressions and expressions containing rational exponents; the complex number system; solving rational, radical, and quadratic equations; solving polynomial inequalities in one variable; solving compound inequalities in one and two variables; graphs, relations and functions including quadratic and trigonometric functions, the distance and midpoint formulas and circles. Emphasis is on technically oriented applications and activities to build skills in applied problem solving.
Prerequisite: MATH 1030 or MATH 1050; minimum grade of "C" Lab fee: $2.00

or

MATH 1148 College Algebra 4 Credits. Lecture: 4 hours
This course is a continuation of the study of functions. The concept of transformations is used to graph and analyze functions including quadratic, higher degree polynomial, power, piecewise, rational, exponential, and logarithmic functions. The function concept is applied to solving equation inequalities, and applications regarding these types of functions. Factor and remainder

theorems and roots of polynomial functions are included. The concept of functions is extended to include composition of functions and inverse functions. Systems of linear and non-linear equations are solved using algebraic and graphical methods. Trigonometric functions of right angles are defined and used in problem solving. This course meets the general education requirement for the AA degree. Not open to students with credit for MATH 1149 and above. Prerequisite: MATH 1075; minimum grade of "C" or placement by completion of MATH 1099 (MATH-1075 module) Lab fee: $3.00

CIVL 1120 Construction Material Science 3 credits. Lecture: 2 hours - Lab: 3 hours
This course offers a comprehensive study of the properties, construction applications, standards, specifications and elementary material testing methods of soils, aggregates, asphalts, Portland cement concrete, masonry, metals and woods. Laboratory exercises include fundamental common construction industry materials testing procedures and comparison of results to industry standards and specifications. The laboratory exercises also provide preparation for the American Concrete Institute (ACI) Grade 1 Concrete Field Technician exam. Preparation in the ACI Grade 1 Concrete Field Technician test is a course requirement.
Prerequisite: MATH 1075 or higher
Lab fee: $30.00

CMGT 1121 Construction Drawings 3 credits. Lecture: 2 hours - Lab: 3 hours
A study of reading and interpreting construction working drawings and project manuals, as related to residential, commercial, industrial and heavy highway construction. Emphasis is placed upon: drawing organization; relationship of plan, section, and elevation; coordination of the drawings and specifications; shop drawings and submittals, graphic symbols and interpretation skills; and construction mathematics required for the use of building drawings.
Lab fee: $30.00

COLS 1100 First Year Experience Seminar 1 credit. Lecture: 1 hour
The First Year Experience Seminar provides students with an introduction to the college. It emphasizes skills and resources necessary to be successful in their personal, academic and career-related pursuits. The course includes an orientation to college resources, policies, and processes. Sections of this course are H-designated Honors classes.
Prerequisite: Required course within the first 15 hours at CSCC
Lab fee: $2.00

YEAR ONE – SEMESTER TWO
ARCH 2100 History of Architecture 3 Credits. Lecture: 3 hours
This course studies the fundamental elements of architecture, its development, and its meaning to various cultures throughout western history. Architecture is viewed from the perspectives of form, function, interior and exterior space, technological development, and landscape. ARCH 2100 meets elective requirements in the Associate of Arts and Associate of Science degree programs.
Prerequisite: ENGL 1100
Lab fee: $9.00

ARCH 2211
Information not available.

ARCH 2266 Working Drawings 4 credits. Lecture: 2 hours – Lab: 6 hours
This course introduces the student to the practice of working drawings. Knowledge learned in prior architectural courses is integrated into the course. Part of the course focuses on individual tasks, such as the generation of details, schedules, and plans, while another part of the course will focus on work generated in a group setting, simulating a team effort common to a modern architectural office.
Prerequisites: ARCH 1114, ARCH 1232, ARCH 1250
Lab fee: $30.00

ESSH 2282 Sustainable Building Strategies 2 credits. Lecture: 2 hours
This course is an introduction to the field of environmentally friendly construction. Sustainable architecture and building site principles will be presented, including strategies for energy-efficient heating and cooling, "green" building materials and methods, alternative energy sources, water efficiency and waste management. Topics include the need for sustainability, energy efficient design, construction and controls, site selection, passive solar heating and cooling, "green" building materials and methods, alternative energy sources and water efficiency and waste management.

YEAR TWO – SEMESTER ONE
ARCH 1114 AutoCAD 2D 4 credits. Lecture: 1 hour – Lab: 6 hours
This course introduces students to the advanced features of AutoCAD and builds upon the basics learned in ARCH 1112. Emphasis is placed on advanced dimensioning features, hatching, attributes, external references and paper/model space. Several small projects will be created utilizing these features. Lectures, in-class demonstrations, and hands-on work sessions are employed as teaching tools during the course. The course uses the current release of AutoCAD.
Prerequisite: ARCH 1112 or permission of instructor
Lab fee: $50.00

ARCH 1214 Electricity & Lighting 2 credits. Lecture: 1 hour – Lab: 3 hours
This course studies the electrical code, electrical systems, standards, conventional symbols, nomenclature, layouts and fixture and equipment schedules. Coordination of electrical work with the elements of the building is emphasized. This course also deals with the fundamentals of lighting within buildings. The appropriate quantity of lighting is calculated and the appropriate selection and placement of lighting within a space is studied.
Prerequisite: CMGT 1121
Lab fee: $30.00

ARCH 1232 Building Codes 2 Credits. Lecture: 1 hour – Lab: 3 hours
This course focuses primarily on building and zoning codes. Emphasis is placed on the OBBC (Ohio Basic Building Code) and the Columbus, Ohio zoning code. Other areas of study include

the influence of professional associations, manufacturers, and testing laboratories in design and construction documents; CSI specifications, their organization, content and relationship to other contract documents; and professional practice in architecture.
Prerequisite: CMGT 1121
Lab fee: $15.00

ARCH 1250 Enclosed Materials 2 credits. Lecture: 1 hour – Lab: 3 hours
This course is designed to expand on the knowledge gained in CIVL 1120, with the study of how such materials and others are combined to form the building shell. The course focuses on the separation between exterior and interior environments. Topics covered include roofing, glass, windows and doors, walls, foundations, and interior finishes, vertical transportation and acoustics.
Prerequisite: CIVL 1120 Lab fee: $15.00

CIVL 1320 Statics & Strength of Materials 3 credits. Lecture: 2 hours - Lab: 3 hours
CIVL 1320 introduces the study of static forces and equilibrium and the resultant stress, strain, deformation, failure and strength analysis of structures under loads. Course also covers the concepts of torsion, modulus of elasticity, shear, bending, centroids and moments of inertia.
Prerequisites: MATH 1075 or higher, CIVL 1120
Lab fee: $30.00

YEAR TWO – SEMESTER TWO
ARCH 2237 Structures 3 credits. Lecture: 2 hours – Lab: 3 hours
This course presents basic conceptual and practical structural design concepts. Steel and concrete structures are studied and evaluated mathematically. The student will learn how to evaluate and design beams and columns in both steel and concrete. Other topics include bearing plate/base plate design, bolted and welded connections, and concrete and masonry wall design. Drafting projects require the use of CAD and will focus on structural elements.
Prerequisite: CIVL 1320
Lab fee: $23.00

ARCH 2270 Professional Practice
3 credits
Students learn about planning projects, defining project scope and translating physical needs into building area, developing alternative solutions, preparing schedules and estimates, coordinating work efforts, and other practical factors. The student must consider physical constraints, code implications, costs, bidding, construction sequencing and practices, design goals, and working with consultants.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: ARCH 1232 or permission of instructor
Lab fee: $23.00

ARCH (Technical Elective)

HUM (Humanities Elective)

(Basic Elective)

Fifth Semester

ARCH 1274 Revit Architecture I 2 credits. Lecture: 1 hour – Lab: 3 hours
Revit Architecture focuses on the first fully parametric architectural design software, which allows buildings to be designed and drawn "virtually," instead of being developed with conventional 2D drawings. Users examine their designs from any direction in order to better visualize them. Once created, the Building Information Model (BIM) can be tested, analyzed, and quantified. Basic concepts of REVIT Architecture will be explored in this course to design, change, and document a building using this revolutionary new parametric building modeler software.
Prerequisites: ARCH 1111, ARCH 1114
Lab fee: $20.00

ARCH 1276 SketchUp 2 credits. Lecture: 1 hour – Lab: 3 hours
This course introduces the student to SketchUp, a software package developed for the conceptual stages of design. SketchUp is a deceptively simple, amazingly powerful tool for creating, viewing, and modifying 3D ideas quickly and easily. SketchUp was developed to combine the elegance and spontaneity of pencil sketching and the flexibility of today's digital media.
Lab fee: $31.00

Natural Science Elective

ENGL 1100 Composition I 3 credits. Lecture: 3 hours
English 1100 is a beginning composition course which develops processes for critically reading, writing, and responding to a variety of texts in order to compose clear, concise, expository essays. The course facilitates an awareness of purpose, audience, content, structure and style, while also introducing research and documentation methods. Course reading and writing assignments may be thematically organized. Sections of this course are S-designated Service-Learning classes. . Sections of this course are H-designated Honors classes.
Prerequisite: ENGL 0190, minimum grade of "C" or COMPASS writing score of 69-99
Lab fee: $5.00

SBS (Social – Behavior Science Elective)

Owens State Community College
College of Technology, Architecture, & Applied Engineering
Perrysburg, Ohio. (All data from owens.edu, 12 Sept. 2015).
2-year Associate of Applied Science in Architectural Engineering Technology

"The School of Technology provides quality technical education that matches the needs of students and employers. A broad range of technical programs and certificates representative of modern industry are intended to prepare students to enter the world of technical work, as well as update skills and enhance lifelong learning."

YEAR ONE – SEMESTER ONE

CIV 101 - Construction Drafting I Credits: 3 (Lec: 1 Lab: 6)
A graphic presentation covers conventions and styles found in architectural and civil drafting. The course includes lettering, symbols and conventions, and dimensioning. Laboratory exercises center on the construction drawings for a residence.
Co-requisites: NONE
Prerequisites: NONE

CIV 110 - Construction Materials I Credits: 3 (Lec: 2 Lab: 3)
A consideration of the characteristics of construction materials used extensively within the Architectural and Civil Engineering fields. Material properties such as load resistance, thermal and fire response, air and moisture leakage, and acoustics will be discussed. Materials and building systems including soils and foundations, wood and steel will be discussed along with their applications and limitations. Labs to support the understanding of material properties will be done using ASTM procedures whenever possible.
Co-requisites: NONE
Prerequisites**:** MTH 096 or equivalent. Please refer to Chapter 2 - Academic College Policy, 3358:11-2-06 Assessment Program for entering students.

EET 130 - Computer Diagnosis Credits: 3 (Lec: 2 Lab: 3)
In this course the each student will identify, configure, and upgrade various components of computer systems, peripherals, and software (i.e. Partition magic, and Acronis). Each student will install Win XP, Win 7, Win 8, and UNIX operating systems. The student will use each OS for a Static and Dynamic network setup in lab. The subsystems installed include memory, disk drives, video cards, I/O ports, and power supplies. Peripherals examined include printers, Nic. and various I/O devices. In addition, students will learn preventative maintenance and troubleshooting techniques.
Co-requisites: NONE
Prerequisites: NONE

ENG 111 - Composition I Credits: 3 (Lec: 3)

Focuses not only on writing but also on reading and critically engaging various texts. Students will read and write essays with a variety of rhetorical purposes: Observing, explaining, investigating, evaluating, problem solving and arguing. Also includes library and electronic research culminating in research papers. Full process approach to writing using the formal elements and conventions of academic prose. (Required in all degree programs)
Co-requisites: NONE
Prerequisites: ENG 091 or placement by exam. Please refer to Chapter 2 - Academic College Policy, 3358:11-2-06 Assessment Program for entering students.

MTH 170 - College Algebra Credits: 4 (Lec: 4)
This course, as a prerequisite for Calculus, addresses equations and inequalities, functions and relations, exponential and logarithmic functions, systems of equations, matrix operations, sequences, series and topics in analytic geometry. A graphing calculator is required.
Co-requisites: NONE
Prerequisites: MTH 096 or equivalent. Please refer to Chapter 2 - Academic College Policy, 3358:11-2-06 Assessment Program for entering students.

QCT 105 - Technology in Society Credits: 2 (Lec: 2)
Information not available.

YEAR ONE – SEMESTER TWO
CAD 115 - Introduction to CAD Credits: 3 (Lec: 2 Lab: 3)
This course uses AutoCad for Students to create entities, parts, assemblies and drawings. Students will learn how to create and modify parts and assemblies, and develop prints for production. Emphasis is placed on industry-based standards of printed views with dimensioning, geometric dimensioning, and tolerancing, and welding standards.
Co-requisites: NONE
Prerequisites: NONE

CIV 210 - Construction Drafting II Credits: 3 (Lec: 1 Lab: 6)
A graphic presentation covers conventions and styles found in architectural and civil drafting. The course includes lettering, symbols and conventions, and dimensioning. Laboratory exercises center on the construction drawings for a residence.
Co-requisites: NONE
Prerequisites: NONE

MET 135 - Statics Credits: 3 (Lec: 2 Lab: 3)
Familiarizes the student with the basic laws of mechanics, development of freebody diagrams, resultant forces, equilibrium conditions of force systems, moments, couples, analysis of structures and static friction.
Co-requisites: PHY 115 and CAD 115
Prerequisites: MTH 170

MTH 228 - Mathematics for Technology Credits: 3 (Lec: 3)
This course meets the additional mathematical needs of the Engineering Technology Student. This course contains topics in introductory Analytical Geometry, Trigonometry and Calculus.
Co-requisites: NONE
Prerequisites: MTH 170 or Placement by Exam. Please refer to Chapter 2 - Academic College Policy, 3358:11-2-06 Assessment Program for entering students.

PHY 115 - Physical Science for Tech Credits: 4 (Lec: 3 Lab: 3)
Studies physics and chemistry including matter and energy, force and motion, heat and thermodynamics, waves and optics, electricity and magnetism and an introduction to inorganic chemistry. Technical applications are emphasized and a weekly laboratory session supplements the lectures. Students retaking this course must repeat both the lab and lecture. Can fulfill Science Elective.
Co-requisites: NONE
Prerequisites: MTH 096 or equivalent. Please refer to Chapter 2 - Academic College Policy. 3358:11-2-06 Assessment Program for entering students.

YEAR TWO – SEMESTER ONE
CIV 211 - Construction Drafting III Credits: 3 (Lec: 1 Lab: 6)
Studies construction detailing. Explores common examples and problems encountered during the production of construction drawings. Drawings are accomplished on CAD.
Co-requisites: NONE
Prerequisites: CIV 210 and CAD 115

CIV 235 - Structural Design I Credits: 3 (Lec: 2 Lab: 3)
This course will present the principles of soil mechanics as it relates to general construction and foundation systems including engineering properties of soils, soils exploration, compaction, water in soils, consolidation and settlement, soil strength, foundation design, and slope stability. These principles will be applied to realistic problems.
Co-requisites: PHY 112 or PHY 152
Prerequisites: EET 130

ENG 112 - Composition II Credits: 3 (Lec: 3)
A directed writing course, which continues the process of learning to read and critically engage various texts. Students write papers that summarize, critique, and synthesize sources, leading to researched and formally documented argumentation papers. Builds upon ENG 111 through its increased focus on academic argument and the processes of integrating written published texts.
Co-requisites: NONE
Prerequisites: ENG 111

MET 136 - Strength of Materials Credits: 3 (Lec: 2 Lab: 3)
Introduces the student to the study of the mechanical properties of materials, including stress and strain, elasticity theory, joining of machine parts and strength of beams and columns.
Co-requisites: NONE

Prerequisites: MET 130 and (MET 135 or CIV 110)

SVT 230 - Land and Route Surveying Credits: 3 (Lec: 2 Lab: 3)
Explores the principles of surveying with traditional and modern survey equipment. Emphasis is placed on turning angles, taping line, determining elevations, calculating areas, layout of roadway curves, topography, mapping and route surveying.
Co-requisites: CIV 101 and MTH 170
Prerequisites: NONE

YEAR TWO – SEMESTER TWO
CIV 105 - Specifications & Cost Estimate Credits: 3 (Lec: 2 Lab: 3)
Examines the process of cost estimating and preparation of specifications for construction projects. Language form, specification order, source material, related documents, and bidding processes are discussed in relation to specification preparation. Man hours, travel time, equipment capacity, material take-off, labor costs, profit and overhead are discussed in relation to cost estimating.
Co-requisites: NONE
Prerequisites: CIV 101 or MTH 170

CIV 111 - Construction Materials II Credits: 3 (Lec: 2 Lab: 3)
A continuation of the topics discussed in CIV 110. Materials and building systems including concrete, masonry, exterior wall cladding, glass, roofing, finishes, and asphalt will be discussed along with their applications and limitations. Labs to support the understanding of material properties will be done using ASTM procedures whenever possible.
Co-requisites: MTH 170
Prerequisites: CIV 110

CIV 215 - Environmental Sys for Building Credits: 2 (Lec: 2)
An introductory overview course on the mechanical systems that are incorporated into the building environment. Topics include heat-loss and gain, load calculations and sizing, human comfort and health requirements, active and passive HVAC systems, lighting, power distribution and service, plumbing and fire protection, architectural acoustics, life cycle and energy and selection/costing. Discusses the spaces required in incorporation of these systems into structures today.
Co-requisites: NONE
Prerequisites: CIV 210

CIV 240 - Structural Design II Credits: 3 (Lec: 2 Lab: 3)
Focuses on the methods of determining shear forces, moments, deflections and bending stresses on structural elements and the application of this information in the selection and these structural elements. Applies basic design of foundations, columns, beams, and trusses to reinforced concrete, wood and steel.
Co-requisites: NONE
Prerequisites: CIV 185

PSY 111 - Indust/Organization Psych Credits: 3 (Lec: 3)
Studies aspects of psychology that can be applied to the workplace including job stress, selection and placement, training, human relations, performance appraisal, engineering psychology, work environment, motivation, leadership and consumer buying behavior. (Social and Behavioral Sciences elective)
Co-requisites: NONE
Prerequisites: NONE

SPE 101 - Public Speaking Credits: 3 (Lec: 3)
A general course that provides students with the basic principles of public speaking through lecture and evaluation of individual speeches. Emphasis is on the audience-centered approach to informative and persuasive speaking. Students will be expected to give a number of speeches throughout the semester. (Liberal Art elective).
Co-requisites: ENG 111
Prerequisites: NONE

Sinclair Community College
Dayton, Ohio. (All data from bgsu.edu, 12 Sept. 2015).
2-year Associate of Applied Science in Architectural Technology

"The Associate of Applied Science in Architectural Technology program features courses in architectural construction, architectural drafting, estimating, mechanics of materials, design of reinforced concrete, and fire prevention fundamentals, to name a few. Additional course work includes interpersonal communications, technical communications, and electives."

Architectural Technology is designed to develop student skills for efficient application of the art and science related to the built environment. Spacious laboratories contain the latest high-tech equipment. Emphasis is on developing architectural drafting skills, both manual and computer aided."

CAT 1101: Architectural Drafting 3 credit hours
Develop proficiency with computer drafting techniques, developing architectural drawings and coordinating a set of construction documents. Includes developing 3D visualization and architectural problem solving skills. Two classroom, two lab hours per week.

CAT 1121: Introduction to Revit 3 credit hours
Learn Building Information Modeling (BIM) techniques and methodology. Develop proficiency with Revit Architecture modeling software including: user interface, modeling techniques, proper modeling workflow and document generation. Learn rendering and animation communication techniques. Two classroom, two lab hours per week.

CAT 1201: Construction Methods & Materials 5 credit hours
Construction methods of materials for both residential and commercial structures. Emphasis on processes and techniques. Understanding of blueprint reading of architectural and civil drawings. Hands-on exercises of residential and commercial applications. Three classroom, three lab hours per week.

CAT 1211: Construction Materials Testing 2 credit hours
This course presents some of the basics of testing materials (concrete, steel, wood, etc.) used in the construction industry. Emphasis on how properties of materials affect their use in the construction process. Utilizes American Society for Testing and Materials (ASTM) Standards. One classroom, three lab hours per week.

CAT 1241: Building Structural Systems 3 credit hours
Basic mechanical and electrical system design principles for residential and commercial structures. Structural engineering principles for designing residential and commercial structures using wood, steel and concrete. Research appropriate building codes and apply knowledge to solve engineering challenges. Three classroom, three lab hours per week.

Social & Behavioral Sciences Elective 3 credit hours

CAT 1401: Construction Estimating 3 credit hours
Construction estimating, beginning with an understanding of the costs of labor equipment and materials, as well as profit and overhead. Quantity measurements of basic construction materials will be used to develop bidding packages. Two classroom, two lab hours per week.

CAT 2101: CAD Design in Revit 5 credit hours
Develop proficiency with Revit design techniques, developing architectural models and coordinating a set of construction documents. Includes architectural and Mechanical, Electrical and Plumbing (MEP) problem-solving skills. One classroom, six lab hours per week.

CAT 2111: Building Mechanical & Electrical Systems 3 credit hours

CAT 2201: Revit Integration 1 credit hour
Learn the philosophy of building information modeling and how Revit and other computer-based modeling software can assist in the design, analysis and documentation of buildings. One classroom, two lab hours per week.

CAT 2401: Engineering Technology Project Management 3 credit hours
Practical planning and control of construction and engineering-based projects. Interrelationships and operations of project management and skills required for success in the current engineering environment. Theory, nomenclature and practical application of engineering management using computer software. Two classroom, two lab hours per week.

CAT 2411: Building Codes & Construction Law 3 credit hours
Building code history, development, application and review processes. Analysis of existing building to determine code status, form recommendations and make presentation. Examine Ohio law impacting various codes, safety, contracting and personnel issues with regard to built environment professions. Develop sample contract specifications. One classroom, two lab hours per week.

CAT 2700: Civil Architectural Technology Internship 2 credit hours
Students earn credits toward degree requirements for work learning experience. Students already working may apply to use that experience to meet internship requirements. Students establish learning outcomes and prepare related reports and/or projects each term. Ten work hours per week per credit hour.

CAT 2780: Architectural Technology Capstone 4 credit hours

COM 2211: Effective Public Speaking 3 credit hours
Designed to improve speaking and listening skills through the study and application of public speaking structure, content and style.

EGV 1301: Architectural Energy Analysis 2 credit hours

EGV 2351: LEED Green Associate Exam Preparation 2 credit hours

ENG 1101: English Composition I 3 credit hours
In English Composition I students learn reflective, analytical and argumentative writing strategies, incorporating sources and personal experience. Students will negotiate between public and private rhetorical situations and purposes to achieve academic literacy. They will write multiple drafts using a recursive writing process as they work toward fluency in style and mechanics.

MAT 1280: Technical Mathematics I 4 credit hours
Accuracy and precision with approximate numbers, geometry, functions, graphs, basic operations on polynomials, right-triangle trigonometry, systems of linear equations, factoring and quadratic equations. Scientific calculator required.

MAT 1290: Technical Mathematics II 4 credit hours
Trigonometric functions of angles, radian measure, vectors, solving oblique triangles, graphs of trigonometric functions, inverse trigonometric functions, fractional exponents, complex numbers, exponential and logarithmic functions, systems of equations, theory of equations and fundamental trigonometric identities. Scientific calculator required.

MET 1131: Personal Computer Applications for Engineering Technology 1 credit hour
Applied computer tools to solve engineering technology problems, emphasizing the integration of word processing, spreadsheets, presentation software and engineering research skills using the Internet. Applications of an integrated approach to research papers, engineering technology analysis, technical laboratory reports and technical presentations. One-half classroom, one and one-half lab hours per week.

MET 2711: Ethics for Engineering Technology Professionals 1 credit hour
Instruction to the core skills of an engineering professional. Technical skills, soft skills and team management techniques. Concepts of lifelong learning, continued personal improvement, engineering ethics, working in a diverse industry and future trends in engineering technology. One-half classroom, one and one-half lab hours per week.

PHY 1131: Technical Physics 3 credit hours

Algebra-based mechanics including kinematics, dynamics, statics, work, energy, power, rotational motion and fluids. Two classroom, two lab hours per week.

SCC 1101: First Year Experience 1 credit hour

This course is designed to help new students make a successful transition to Sinclair Community College. Topics include college resources; academic, career and personal goals; learning styles; the learning process; financial responsibility; stress and wellness; and an introduction to the general education competencies at Sinclair. Two lab hours per week.

Course Option: {CAT 1161 OR CAT 2741} 2 credit hours

CAT 1161 - Introduction to Civil & Architectural Technology

An introduction to career fields of Architecture and Civil Engineering Technology. Equivalent to Project Lead the Way CEA. One classroom, two lab hours per week.

CAT 2741 - Current Topics in Architecture

Explore recent developments in the architectural profession, especially as related to the architectural technology curriculum. Topics to include environment, green building, energy conservation, building technology, etc. One classroom, two lab hours per week.

Terra State Community College
Fremont, Ohio. (All data from bgsu.edu, 12 Sept. 2015).
2-year Associate of Applied Science in Architecture

"The Architectural Construction Management program offers students an introduction to renewable energy and sustainable architecture in addition to basic traditional architecture courses and construction management courses.

Students will gain an understanding of current trends in energy resources and sustainable/green architecture through site visits, guest speakers, and text. The students will also gain an understanding of the construction industry through vocabulary, drafting techniques, blueprint reading, construction standards, and computer-aided design (CAD). Codes and regulations established by governing bodies are also studied."

ADT 1110 Architectural Drafting
2 Lab 2 Lecture 3 Credits
This course is a study of basic architectural drafting skills: lettering, technical drawing, detailing of frame construction and organization of working drawings. This is accomplished by producing a set of plans for a small residence. (Fall)

ADT 1120 Construction Methods and Materials
0 Lab 3 Lecture 3 Credits
Introduction to the building industry through exposure to the various parties involved in the industry. Material and methods used in residential, small commercial and large commercial projects, problems and solutions in
assembly of materials into buildings will be studied. (Fall)

ADT 1140 Construction Survey
4 Lab 1 Lecture 3 Credits
Basic surveying concepts, surveying instrumentation: Art of field, data acquisition, planning and execution of field surveys. Application of professional surveying practice engineering and other disciplines. Students will use surveying equipment and general procedures in land surveying. Introduction of computer-based geographic information systems which organize, analyze and present spatially reference data.

ADT 2190 Building Systems
2 Lab 2 Lecture 3 Credits
The course covers designing and drawing of plans and details for heating and cooling systems, water supply, plumbing, and electrical systems. Methods of sizing systems and use of handbooks are studied. (Spring)

ADT 2210 Structures
2 Lab 2 Lecture 3 Credits
Prerequisite: MTH 1310
This is an application of the mechanics and strength of materials principles for the design of structural steel and timber members in building construction. Beams, columns, connections, and types of floor, wall, and roof framing will be studied. (Fall)

ADT 2240 Site Planning
2 Lab 2 Lecture 3 Credits
This is a study of phases in the development of a site plan using Computer-Aided Design (CAD) in planning of site circulation, utilities, grading, and site drainage. (Spring)

ADT 2250 Sustainable Architecture
1 Lab 3 Lecture 3 Credits
Prerequisite: College-level reading
This course is a study of the process of green building, covering the theory, history, and current materials and systems that are used in today building industry to meet the environmental needs. LEED (Leadership in Energy and Environmental Design) is used as an assessment system to better understand the process of rating building practices and design for both residential and commercial type buildings. (Spring)

ADT 2360 Estimating
4 Lab 1 Lecture 3 Credits
This course covers methods and procedures for preparing an estimate. Emphasis is on preparing quantity takeoffs for the major trades - concrete, steel, masonry, carpentry, excavation and site work. Included is an introduction to pricing, including considerations of job overhead. (Spring)

ADT 2400 Fundamentals of Alternative Energy
1 Lab 3 Lecture 3 Credits
Prerequisite: COMPASS placement into MTH 1150
This course is first a introduction to thermodynamics, electrical principles, the related technologies for electric power and the current status of our non-renewable energy sources. Also covered are the multidisciplinary topics of alternative energy, including fuel cells, solar energy (photovoltaic and solar heating), wind energy (turbines), hydrogen energy, biomass, geothermal, wave and tidal energy. Energy generation system integration is also discussed. (Fall)

CAD 1240 CAD: Architectural
2 Lab 2 Lecture 3 Credits
The application of CAD in architectural drafting in developing floor plans, building sections, site plans, and wall sections is studied. (Fall)

QCT 1020 Blueprint Reading

2 Lab 1 Lecture 2 Credits

An introductory blueprint reading course for all trades. An emphasis is placed on the ability to read working shop drawings and to produce technical sketches. Topics covered include: basic drawing practices, orthographic projection, sections, dimensioning, isometric sketching, and assembly drawings. (All)

GEN 1000 First Year Seminar

0 Lab 1 Lecture 1 Credit

In this course, students will learn how to access and use a variety of academic and support services to help them transition smoothly to the college environment and to succeed at Terra State. The course is delivered through modules that allow students to choose some topics based on relevance for them. The modules will cover a variety of topics including, but not limited to, Financial Aid, Library Research, Study Skills / Stress and Time Management, Career Services / Advising / Planning and Finalizing your Degree, CAMS / Student Portal /E-portfolio, How to Be an Informed College Student, and the Adult Students. (All)

CIT 1090 Computer Fundamentals

Information not available.

ENG 1050 College Composition

0 Lab 3 Lecture 3 Credits

Prerequisite: Placement testing; College level reading

English 1050 is an introductory college writing course that is based on reading. Writing assignments require accurate reading of professionally written essays. Because accurate reading is vital to understanding and critical thinking, students will learn to become active participants in the reading process. Through this process, students learn to achieve clear, thoughtful writing that is coherent, organized, and well developed. The course emphasizes revision through peer review, instructor feed

back and intervention, and portfolio assembly. The course also emphasizes critical analysis of ideas and "writing as a process." (All)

ENG 1900 Technical Writing for Business and Industry

0 Lab 3 Lecture 3 Credits

Prerequisite: "C" or better in ENG 1020 or ENG 1050

This course provides an understanding of technical writing theory and practical applications. Students will study principles of readability, audience analysis, document design, and speech communication. Topics include instruction and procedure writing, resumes/cover letters, business letters/memos, informal business reports and oral presentations. The computer lab component of the course allows students to practice

their business and technical writing skills. (All)

MTH 1310 Intermediate Algebra
0 Lab 4 Lecture 4 Credits
Prerequisite: "C" or better in MTH 0140 or Placement Testing
Continuation of algebra; proficiency with topics in MTH 0140 is assumed. Topics include factorization of polynomials; operations with rational expressions, rational exponents, radical expressions, and complex numbers; simplification of rational, radical, and logarithmic expressions; solution of problems involving ratio and variations; solution of quadratic, rational expression, radical, exponential, logarithmic, and absolute value equations; solution of linear and absolute value inequalities; and evaluation of polynomial, rational, radical, exponential, and logarithmic functions. Graphing calculator required. (All)

MTH 1320 Intermediate Trigonometry
0 Lab 3 Lecture 3 Credits
Prerequisite: "C" or better in MTH 1310
Introduction to trigonometry. Topics include angular measure in degrees and radians; definition, evaluation, operations with, and graphing of trigonometric functions and their inverses; solution of right triangles and oblique triangles; verification of trigonometric identities; operations with vectors; and graphs in and conversion between rectangular and polar coordinates. Graphing calculator required. (All)

PHY 1310 General Physics I
0 Lab 4 Lecture 4 Credits
Prerequisite: MTH 1320; Co-requisite: PHY 1315
The first semester of a two-semester, algebra-based introduction to physics. Topics include kinematics in 1-D and 2-D, vectors, force and Newton's laws of motion, work, energy, conservation of energy, linear momentum, collisions, rotational kinematics and dynamics, angular momentum and rotational energy, rotational and translational equilibrium, gravitation, properties of solids and fluids, heat and thermodynamics, the kinetic theory of gases, simple harmonic motion, waves and sound. There is a separate laboratory component to this class that must also taken. (Fall, Spring)

PHY 1315 General Physics Lab I
2 Lab 0 Lecture 1 Credit
Prerequisite: MTH 1320; Co-requisite: PHY 1310
This is the lab component of the first semester of a two-semester, algebra-based introduction to physics. A series of experiments is included to enhance the material covered in PHY 1310. Topics covered in the experiments include 1-D kinematics, vector addition in 2-D, elastic and inelastic collisions, energy and momentum conservation, statics, elasticity, buoyancy, density, thermal expansion, heat, sound waves, and resonance. (Fall, Spring)

SPE 2010 Effective Speaking
0 Lab 3 Lecture 3 Credits
Prerequisite: College level reading
; Pre- or co-requisite: ENG 1020 or ENG 1050
This course is designed to give practice in the principles of effective public speaking and other forms of oral communication. Experience is gained in the composition and presentation of informative and persuasive types of speeches, with emphasis on media accompaniment. The course also addresses the fundamentals of the communication process and how these fundamentals relate to effective speaking.
Group discussion and interpersonal communication are also covered. (All)

Humanities Elective

Social Science Elective

Hocking College
Nelsonville, Ohio. (All data from hocking.edu, 12 Sept. 2015).
2-year Associate of Applied Science in Architecture

"Architectural and Mechanical Design offers jobs in many occupational settings. As a drafter, you will be at the center of a changing world. Ideas, sketches, notes, data, and workable plans are the instruments of change. Using computer assisted drafting software, networking technology and operating systems, the Architectural and Mechanical Design program provides extensive training in graphic communication and critical thinking to prepare you for future mechanical design jobs.

Your mechanical design job preparation starts with your drafting training in our on-campus labs. Continue your design training with software used to produce 2-dimensional and 3-dimensional drawings and become proficient in navigating the commands. Finally, you will create a basic set of residential house plans and architectural details. Prepare for design jobs by learning why you draw things while you are learning how to draw.

Get real world mechanical design job or architectural job experience in a practicum where you'll apply what you've learned to a real situation. Connect with one of the companies who contact the program needing assistance with CAD projects."

YEAR ONE - SEMESTER ONE
AMD 1101 Mechanical Design 5 Credits
Introduction to drafting fundamentals. Includes freehand sketching, geometric construction, orthographic projection, annotation, sectioning, auxiliary projections and working drawing.
Class (3.00), Lab (6.00)

AMD 1102 Materials and Processes 4 Credits
Discussion and application of basic materials used in manufacturing of metals, plastics and ceramics. Includes threads, fasteners, sheet metal developments and assembly. Also introduces the aspects of manufacturing environment with casting, forming or shaping of materials, and how materials or processes impact product designs.
Class (2.00), Lab (6.00)

MATH 1108 Intermediate Algebra 3 Credits
Systems of equations, arithmetic of polynomials, rational expressions, factoring, fractional equations, inequalities, exponents, quadratic equations, absolute values, functions and graphs. Application problems are emphasized.
Class (3.00). Equivalent to MATH-107B, MATH-201B, MATH-201E, MATH-201N, MATH-108, MATH-108B, MATH-108E, MATH-108H, MATH-108N, MATH-201H, MATH-201, MATH-171.
Prerequisites: take MATH-0054, MATH-102, MATHELM-MATH.

GS 1000 HC Cornerstone 1.5 Credits
Hocking College orientation, information and personal success course designed to empower students with the knowledge, skills and attitudes possessed by successful students and future employees. Special emphasis is placed upon group and hands-on learning in the areas of personal and professional success, college success, technology success and learning success. The emphasis of the course encourages the building of professional development habits that will prepare the student for a good job upon graduation.
Class (1.50). Equivalent to GS-1101, GS-101.

Social Science/Psychology Elective

YEAR ONE - SEMESTER TWO
AMD 1105 Architecture Design 4 Credits
Architectural drawing and design. Includes architectural terminology and symbology and details of architectural working drawings for both commercial and residential structures.
Class (2.00), Lab (6.00). Equivalent to ARC-105, DD-200.

AMD 1106 Building Codes & Designing for Efficiency 3 Credits
Building codes and how the application of building codes and variances affect the design of buildings and architectural projects, and the awareness of the effect of a efficient design.
Class (2.00), Lab (3.00).

ENG 1122 English Composition I 3 Credits
Focuses on employing rhetorical strategies to craft essays that support and defend ideas in writing; study various methods of development and writing genres for different communications purposes; and organize and unify essay components. Writing as a process will be stressed with emphasis on prewriting and revision. Students will build a portfolio of work throughout the semester then review with the instructor to assess growth as a writer.
Class (3.00). Equivalent to COMM-122, ENGL-151.
Prerequisites: take ENGL-0121 or COMM-121.

PHYS 1201 Physics – Motion 3 Credits
Covers the study of forces, Newton's laws of force and motion; harmonic motion; work, energy and power; basic machines; properties of gases, liquids and solids.
Class (2.00), Lab (3.00). Equivalent to PHYS-201.
Prerequisites: take MATH-1108 or MATH-108.

MICS 1141 Introduction to Word & Excel 1 Credit
Introduces the spreadsheet software Microsoft Office Excel including creating and modifying spreadsheets and charts, as well as using the database capabilities. Design and manipulate multiple spreadsheet and database files to apply the major functions of Excel.
Lab (3.00).

YEAR TWO – SEMESTER ONE

AMD 2202 Advanced Mechanical Design 4 Credits

Concepts of complex design necessary in the production of mechanical parts and assemblies. Concepts include tolerance dimensions, geometric dimensions, appropriate material selection, design and assembly practices. Content areas: extended dimensioning practices, design drawing, detail drawing, advanced working drawings and welding drawings.
Class (2.00), Lab (6.00).
Prerequisites: take AMD-1101, DD-101, DD-102, DD-103.

NRM 1123 Surveying and Mapping 3 Credits

Plane surveying procedures and applications for distance, direction and elevation measurements, use and care of surveying instruments including the transit, hand level and engineering level. History, basic applied mathematics, units of measurement and the public land survey system are explored. Basic survey mapping techniques are introduced.
Class (2.00), Lab (3.00). Equivalent to NRM-123, NR-123.

AMD 2203 Modeling 3 Credits

An inventory study of 3D presentations used in the field of architecture and mechanical. Includes CAD modeling, 2D artistic output representations of the models and traditional 3D creation of models and introduces the design using solid molding and parametric modeling in design.
Class (1.00), Lab (6.00). Equivalent to DD-202.

COMM 1130 Speech 3 Credits

Emphasizes communication process and extemporaneous speaking skills through informative, demonstrative and persuasive speeches.
Learn to analyze audiences, choose and narrow topics, develop content through library and other resources, use presentation aids, clearly organize speech material and effectively deliver finished speeches to a class audience.
Class (3.00). Equivalent to COMM-130.
Prerequisites: take ENGL-0121 or COMM-121.

EE 1126 Introduction to Electricity 3 Credits

Fundamentals of electricity and the function and operation of electrical test equipment. Includes multimeters, oscilloscopes, and AC and DC signal generators. The function of basic electrical components is studied and used in the analysis of AC and DC series and parallel circuits. Voltage, current, resistance and power are analyzed mathematically and through practical application in the laboratory.
Class (2.00), Lab (3.00). Equivalent to EE-126.
Prerequisites: take MATH-1108 or MATH-108.

YEAR TWO – SEMESTER TWO

AMD 2206 Advanced Architectural Design 4 Credits

Class (2.00), Lab (6.00). Prerequisites: take AMD-1105 or ARC-105.

AMD 2207 Civil Engineering & Site Plan 2 Credits

Site planning and understanding of all civil engineering drawings, archival drawings, site plans, grading plans and cut and fill schematics. Includes sewage system detailing, parking layouts, terrain modeling with contour mapping, utility layouts, site development and details.
Class (1.00), Lab (3.00).
Prerequisites: take AMD-1105 or ARC-105.

GEO 1104 Introductions to GPS and GIS 2 Credits

Introduction to traditional map information and the basic concepts and uses of Geographic Information Systems. Exercises include the mapping, display, editing, and analysis of spatial data using ArcGIS software.
Class (1.00), Lab (3.00). Equivalent to GEO-100.

MATH 1110 Geometry and Trigonometry 3 Credits

Plane and solid geometry, right triangle trigonometry, law of sine and cosine. Word problems are emphasized.
Class (3.00). Equivalent to MATH-202, MATH-110.
Prerequisites: take MATH-1108, MATH-1113, MATH-108 or MATH-113

AMD 2296 Architecture & Mech Design Practicum 2 Credits

Hands-on experience in the field of Architecture and Mechanical Design to develop skills in the field and learn about the working environment. This practicum site could lead to full time employment or used to support the required need for experience before employment.
Class (1.00), Lab (8.00). Equivalent to DD-296.

ENG 1104 Job Search Techniques 1 Credit

Designed to prepare students to take charge of their own career planning. Through self-analysis of talents, preferences and skills, students begin to develop a career plan. Practice the various marketing techniques (job market research, resume and letter writing and interviewing) necessary to obtain the right job.
Class (1.00). Equivalent to COMM-104, GS-102, COMM-104.
Prerequisites: take ENGL-0121 or COMM-12

Stark State College
North Canton, Ohio. (All data from stark.edu, 12 Sept. 2015).
2-year Associate of Applied Science in Civil Engineering Technology (Architectural Major)

"Analyze the role of architecture in the building construction industry while developing an understanding of the design process and the relationship between the architect, engineer and contractor. You'll learn the fundamentals of design, manual and computer-aided drafting, building construction and mechanical equipment and the basic engineering of structures as you gain marketable knowledge through classroom, lab and field experiences."

SSC101 Student Success Seminar
This course is designed to aid students in gaining the skills necessary for academic success at Stark State College (SSC). Topics include learning styles, critical thinking, time management, study and test-taking techniques, communication skills, and a variety of personal development strategies. Students will learn how to access and use SSC resources such as mystarkstate, the College's Learning Management System (LMS), Digital Library, Writing Center, Career Development, advising, tutoring, and other College support services. This course also fosters connections between students, their respective academic divisions, and their classmates. Upon completion of this course, students should be able to incorporate into their degrees or certificate programs the tools and skills necessary to be academically and professionally successful.

ENG124 College Composition
This course emphasizes writing based on reading response with review of essay development, grammar, and punctuation. Emphasis is on the process of drafting, revising, and editing to achieve clarity. A research project requires APA or MLA documentation. TMEC Approved effective. Autumn 2008.

CET121 Building Materials and Construction Methods
This course familiarizes the student with the basic materials of construction according to their physical properties, durability and suitability for use under varying conditions. Use of materials in combination with one another and in the finished product will be examined both verbally and graphically. Emphasis is placed on material selection according to given criteria. This course is Ohio TAG approved. OET016 effective Summer 2008.

CET122 Architectural Drafting I
This course familiarizes the student with the preparation and comprehension of basic architectural drawings. Intended for those with little or no drafting experience, the course will concentrate on drafting techniques through the drafting of plans, elevations and selected details, in pencil on vellum. 3.000 Credit hours, 1.000 Lecture hours , 4.000 Lab hours

MTH135 Precalculus
Study of linear and quadratic equations, their applications; solving rational and radical equations; complex numbers; linear, polynomial and rational inequalities; equations and inequalities involving absolute value; graphs of equations; relations and functions; transformation of functions; combining functions and composite functions; inverse functions; exponential and logarithmic functions and equations; angles and their measure; right angle trigonometry, trigonometric functions of any angle, graphs of trigonometric ratios; inverse trigonometric functions; trigonometric identities and equations, sum, difference, double angle, half angle; applications of trigonometric functions; systems of equations; matrices and determinants; the conic sections; sequences and series.
5.000 Credit hours, 5.000 Lecture hours

ITD122 Computer Applications for Professionals
Computer Applications for Professionals describes the components and peripherals of a computer/PC and how they function and communicate as a system. Principle topics covered are the Windows operating system, Internet applications, the Windows networking environment and a variety of software application packages used to solve scientific, business, and engineering technology problems.
3.000 Credit hours, 2.000 Lecture hours, 2.000 Lab hours

MET124 Statics and Strength of Materials
The study of major force systems under conditions of equilibrium. Various methods are used to analyze the effects loads have on structural members and machine components. Topics include force systems, friction, stress and strain, moment and shear diagrams, centroids, moments of intertia, and beam deflection analysis. Emphasis is placed on learning the fundamentals and applying them to solving problems. TAG approved course- OET007 effective Spring 2008.
4.000 Credit hours, 4.000 Lecture hours, 0.000 Lab hours

CET123 Architectural Drafting II
This course concentrates on the preparation of building details and sections. Emphasis will be placed upon the design of details and their synthesis into a final graphic product.
3.000 Credit hours, 1.000 Lecture hours, 4.000 Lab hours

CET227 Surveying I
The student is given practical experience in the use of the various surveying instruments while learning how to measure distances, angles and elevations. Methods of determining error of closure, coordinates and area for a property survey are discussed, as well as construction surveys.
3.000 Credit hours, 1.000 Lecture hours, 4.000 Lab hours

PHY121 College Physics I with Algebra (lab)
Study of motion, force, momentum, energy, mechanical advantage, structure and properties of matter, fluids, heat. Problem-solving in orientation, emphasizing the application of formulas, algebra, and trigonometry to physical situations. Laboratories focus on the correct reading of measuring instruments, proper handling of measurement in calculations, and testing physical theories using measured data. TAG approved course- OSC021(Not for Physics majors)

approved Spring 2008. TAG approved course - OSC014 (not for Physics majors) approved Spring 2008. TMNS Approved effective Autumn 2008.
4.000 Credit hours, 3.000 Lecture hours, 2.000 Lab hours

ENG221 Technical Report Writing
This course stresses clarity, logic and appropriate organization in informal and formal technical reports. An oral presentation/proposal may be required. TMEC Approved effective Autumn 2008. Ohio Transfer Module Approved Spring 2012 TME002.
3.000 Credit hours, 3.000 Lecture hours

DET125 Basic AutoCAD
This course begins with basics and gives students hands-on experience using personal computers to create engineering drawings with AutoCAD software. Topics include: basic components of a CAD system, overview of [Windows] operations, input methods, drawing setup and display, editing, dimensioning, text, layers, hatching, blocks and plotting. This course is Ohio TAG approved. OET012 effective Summer 2008. CTAG CTMET005 approved Spring 2012.
3.000 Credit hours, 1.000 Lecture hours, 4.000 Lab hours

CET223 Structural Design I
This course introduces the student to the analysis of simple structures. Topics include the application of loads on structures, and the analysis and design of steel and concrete members such as beams, columns, and frames. Current computer software for structural analysis will also be used.
3.000 Credit hours, 2.000 Lecture hours, 2.000 Lab hours

CET232 Land Planning and Design
This course covers the study of site capabilities and potentials as they relate to land planning and subdivision design. Students will complete preliminary layouts for projects such as industrial parks, housing allotments, planned unit developments and commercial home sites in accordance with zoning and subdivision regulations.
3.000 Credit hours, 1.000 Lecture hours, 4.000 Lab hours

CET235 Construction Management, Job Cost and Safety
This course examines the progression of a building project from its inception to completion along with the administration of it in the office and in the field. Contract law and the legal implications of documents will be discussed. The student will also be familiarized with specifications, shop drawings and computerized project control software.
3.000 Credit hours, 3.000 Lecture hours, 0.000 Lab hours

CET226 Estimating
This course develops the methods and procedures for preparing construction estimates, both manually and electronically. Topics include excavation, masonry, concrete, steel and carpentry. Emphasis is placed on take-off procedures and pricing, consideration of labor and equipment costs, and overhead and profit. Computer programs will be utilized to establish a construction schedule. The student will do a complete estimate of a building project and prepare a competitive bid for the job.
3.000 Credit hours, 1.000 Lecture hours, 4.000 Lab hours

CET225 Sustainable Building Service Systems
This course examines sustainable storm water management, water supply and waste for buildings and how they can be designed to promote conservation, thermodynamics of buildings and how design of the envelope can reduce energy usage. HVAC system design for conservation and lighting design to maximize day-lighting and energy conservation.
3.000 Credit hours, 2.000 Lecture hours, 2.000 Lab hours

CET233 Architectural Design
The basics of design will be examined while solving architectural design problems. The student will be required to prepare preliminary design drawings that fully express the intended solution.
3.000 Credit hours, 1.000 Lecture hours, 4.000 Lab hours

CET234 Architectural CAD
In this course, students will review architectural working drawings while covering the basic principles of Building Information Modeling (BIM) through the use of Revit Architecture CAD software. Students will be introduced to the tools of Revit Architecture CAD and parametric modeling. The fundamental concepts covered in this course include: user interface, parameters, families, walls, roof openings, rendering, and printing. Students will produce a variety of architectural working drawings utilizing Revit Architecture CAD software.
3.000 Credit hours, 1.000 Lecture hours, 4.000 Lab hours

Arts & Humanities Elective

Central Ohio Technical College
Newark, Ohio. (All data from cotc.edu, 12 Sept. 2015).
2-year Associate of Applied Science in Civil Engineering Technology

"The Architectural Engineering Technology in COTC's Engineering Technology program is a two-year program placing a heavy emphasis on computer aided drafting (CAD) and includes the most up-to-date versions of AutoCAD and Revit. Through hands-on and lab-based courses, students are exposed to design and learn residential and commercial construction document production."

YEAR ONE - SEMESTER ONE

ARCH 110 CAD Fundamentals 2 Credits

Prerequisite: None. Course is graded A-F. This course covers two-dimensional drawing, viewing and editing commands of the CAD system. The student will learn to construct dimensioned orthographic and will gain familiarity with the system hardware, peripherals and software. ARCH-110 CAD Fundamentals replaces DDT-3706 Introduction to CAD and DDT-3707 Intermediate CAD in the Quarter system. Completion of ARCH-110 and ARCH-111 Advanced CAD meet the Ohio Transfer Assurance Guide standards for course OET012 and also meet the Career Technical Credit Transfer (C-TAG) standards for course CTMET005.

ARCH 115 3D Design with SketchUp 1.5 Credits

Prerequisite: None. This course covers techniques for conceptualizing, creating and presenting three-dimensional ideas quickly and easily using SketchUp software. The student will gain a sound foundation and working knowledge of SketchUp with the primary focus being on the creation of objects, buildings, and landscapes through 3D computer modeling. Course is graded on an A-F basis. ARCH-115 3D Design with SketchUp replaces DDT-3759 3D Design with SketchUp.

ARCH 135 Technical Drawing 3 Credits

Prerequisite: None This course is an introduction to basic techniques used to communicate with technical drawings utilizing both sketching and drafting with instruments. The course presents information and skill building in the graphic language of orthographic views, auxiliary views, dimensioning, sections and pictorial views. Course is graded on an A-F basis. ARCH-135 Technical Drawing replaces DDT-3728 Drafting II and DDT-3758 Engineering Sketching in the Quarter system.

ENGL 112 Composition I 3 Credits

Prerequisite: COMPASS placement or C grade (2.00) or better in GENR-091 or C grade(2.00) or better in both GENR-095 and GENR-097. Course is graded A-F. Composition I is a writing intensive theme-based course that facilitates the development of college-level writing skills. The student will compose papers using expository writing while incorporating one's own thinking with credible research using MLA format. The student also will be introduced to APA format guidelines. The course emphasizes critical thinking, analytical reading, thesis development and deep revision of one's own compositions. The course also includes analysis of audience and

theme in one's own writing and the writings of others, while developing the student's critical reading skills. ENGL-112 Composition I replaces ENGL-110 Composition I in the semester system. Both ENGL-112 and ENGL-110 replaced COM-1535 Composition I in the Quarter system. ENGL-112 meets the Ohio Transfer Module standards for course TME001.

ENGR 100 Introduction to Engineering Technologies 1 Credit
Prerequisite: None. Course is graded A-F. The course is an introduction to engineering technologies. The course will cover different areas of engineering technology, professional opportunities, College resources, ethical decision-making, teamwork, problem-solving approaches, the relationship of engineering technology to the wider world, and communicating to diverse audiences. ENGR-100 is a new Semester course.

ENGR 106 Computer Applications for Engineering Technologies 2 Credits
Prerequisite: None. Course is graded A-F. This course equips the students with skills to create professional engineering documents with a personal computer. Emphasis is to enable students to effectively communicate in writing for personal and in professional engineering work place. Upon completion, students would be able to create professional engineering documents such as proposals and spreadsheets for various types of presentations. ENGR-106 is a new Semester course.

Non-Technical Elective – Social & Behavioral Science 3 Credits

YEAR ONE - SEMESTER TWO
ARCH 111 Advanced CAD 2 Credits
Prerequisite: C grade (2.00) or better in ARCH-110. Course is graded A-F. This course, the second in a series, builds on the concepts of CAD Fundamentals and covers advanced topics including customizing various aspects of the CAD drawing environment and the third dimension. ARCH-111 Advanced CAD replaces DDT-3707 Intermediate CAD and DDT-3708 Advanced CAD in the Quarter system. Completion of ARCH-111 and ARCH-110 CAD Fundamentals meet the Ohio Transfer Assurance Guide standards for course OET012 and also meet the Career Technical Credit Transfer (C-TAG) standards for course CTMET005.

ARCH 125 Revit Architecture 1.5 Credits
Prerequisite: C grade (2.00) or better in ARCH-110 or permission This course introduces Revit, an object based "Building Information Modeling" (BIM) computer program used by Architects and building designers. In this lab based course the student will explore Revit and gain experience in its concepts and capabilities. Through a series of hands-on lessons the student will create a detailed computer model of a building. The student will then use the program to develop a set of construction drawings generated from the building model. Course is graded on an A-F basis. ARCH-125 Revit Architecture replaces DDT-3705 Revit Architecture in the Quarter system.

ARCH 168 Construction Materials 3 Credits

Prerequisite: None In this course, the fundamental characteristics of the most frequently used materials in modern construction are presented. Materials research, selection, proper use of materials, construction methods, and detailing practices are investigated. Course is graded on an A-F basis. ARCH-168 Construction Materials replaces DDT-3748 Materials of Construction in the Quarter system.

ARCH 190 Architecture I 3 Credits

Prerequisite: Must complet ARCH-110 In this course the student is given a sequence of drafting and design projects involving the development of a set of residential working drawings. In addition, the course explores residential design and the history of American house styles. Computer Aided Drafting is introduced and used in the production of assigned drawings. Course is graded on an A-F basis. ARCH-190 Architecture I replaces DDT-3766 Architectural Design II in the Quarter system.

MATH 150 Pre-Calculus 5 Credits

Prerequisite: C grade (2.00) or better in MATH-070 or appropriate score on COMPASS placement exam This course is a study of algebraic functions, trigonometry, vectors, conic sections, sequences and series. The course will include the study of polynomial, rational, radical, exponential, logarithmic and piece-wise defined functions, and the trigonometric functions and their graphs . Topics investigated will include domain, range, graphs, inverses, operations, equations, inequalities and their applications. Course is graded on an A-F basis. MATH-150 replaces MTH-1216 Pre-Calculus in the Quarter system. MATH-150 MATH-130 replaces MTH-1218 Statistics in the Quarter system. MATH-150 meets the Ohio Transfer Module standards for course TMM005.

PHYS 100 General Physics 4 Credits

Prerequisite: C grade (2.00) or better in MATH-080 or COMPASS placement; Recommend completion of or concurrent enrollment in a pre-college or college level composition course General Physics provides a brief survey of fundamental concepts of science, mechanics, the properties of matter, heat, sound, electricity and magnetism, light, atomic physics, and nuclear physics. The student will apply the concepts in the laboratory portion of the course. Course is graded on an A-F basis. PHYS-100 replaces PHY-1721General Physics in the Quarter System. PHYS-100 will be submitted to meet the Ohio Transfer Module standards for course XXXX.

YEAR TWO – SEMESTER ONE

ARCH 176 Architecture History Survey 3 Credits

Prerequisite: None This course is a survey of architectural traditions from early civilization to the modern architecture of the 21st Century, including buildings, landscape and planning. Course is graded on an A-F basis. ARCH-176 Architecture History Survey replaces DDT-3718 Architectural History Survey in the Quarter system. ARCH-176 meets the Ohio Transfer Module standards requirements (OTM) TMAH-Transfer module arts and humanities.

ARCH 290 Architecture II 3 Credits

Prerequisite: ARCH-125 This Architectural design and drafting course focuses on commercial construction. BIM software is used to produce a series of working drawings as typically found for a small commercial project. The design process is reinforced and building codes are investigated as they apply to the design of the project. Course is graded on an A-F basis. ARCH-290 Architecture II replaces DDT-3776 Architectural Design III in the Quarter system.

BIO 105 Environmental Science 4 Credits

Prerequisite: None. It is highly recommended that a pre-college or college-level composition course be completed prior to enrolling in BIO-105. Course is graded A-F. The course is an introduction to environmental science with an emphasis on the complexity and interrelatedness of environmental issues, concerns, problems and economics. The impact of humans on ecosystems, resources, energy and the environment are presented. Special reference is made to the significance of sustainability and the problems of pollution, waste management, hazardous and toxic materials. The roles of business, industry and government related to the environment will be addressed. BIO-105 replaces BIO-1730 Environmental Science in the Quarter System. BIO-105 meets the Ohio Transfer Module standards for course TMNS.

CIVL 240 Statics & Strengths of Materials I 2 Credits

Prerequisite: C grade (2.00) or better in MATH-150 and PHYS-100 (or concurrent enrollment in PHYS-100). Course is graded A-F. This course includes the study of static forces and equilibrium and the resultant stress, strain, deformation, failure and strength requirements in straight line tension structures, compression and bearing members, shear elements, torsion elements, and angled structures. CIVL-240 replaces CIVIL-240 Statics & Strengths of Materials I in the Semester system. Both CIVL-240 and CIVIL-240 replace DDT-3257 Statics & Strengths of Materials I in the Quarter system.

ENGL 208 Technical Writing 3 Credits

Prerequisite: C grade (2.00) or better in (ENGL-112 or ENGL-110). Course is graded A-F. Technical Writing strengthens the student's composition skills in technical communications employed in information technology, engineering, industry and health and social sciences. The student will examine the various contexts for employing technical communications, the available and appropriate means of conveying technical information, and the needs and goals of various audiences in reading and employing technical communications. The course emphasizes both concise and effective technical writing strategies and the ability to present this information clearly using oral communication. The course also stresses the value of collaborative projects in the workplace. The student will employ a variety of technological resources, including websites,

research databases, PowerPoint, and Microsoft Publisher to analyze and create documents and presentations both individually and collaboratively. ENGL-208 replaces ENGL-206 Technical Writing in the Semester system. Both ENGL-208 and ENGL-206 replace COM-1525 Technical Writing in the Quarter system. Both ENGL-208 and ENGL-206 meet the Ohio Transfer Assurance Guide standards for OBU005.

SPCH 100 Fundamentals of Communication 3 Credits
Prerequisite: None This introductory course explores oral communication and its impact on the individual in a variety of settings; it examines the basic principles of communication in one-on-one, small group, and public speaking situations. Activities are provided to the student that will allow him or her to practice and develop intrapersonal, interpersonal skills, group decision making and public speaking competence. Upon completion of the course, the student will have a better understanding of the various elements of the communication process, this awareness assisting in both the student's personal and professional life. Course is graded on an A-F basis. SPCH-100 replaces COM-1534 Effective Communications in the Quarter System. SPCH-100 meets the Ohio Transfer Assurance Guide standards for course OCM004.

YEAR TWO – SEMESTER TWO

ARCH 230 Building Mechanical Systems 2 Credits
Prerequisite: C grade (2.00) or better in ARCH-110 Plumbing, electrical and HVAC systems for buildings are the focus of this course, as well as, standard drafting practices for plumbing, electrical and HVAC plans. Course is graded on an A-F basis. ARCH-230 Building Mechanical Systems replaces DDT-3737 Building Mechanical Systems in the Quarter system.

ARCH 249 Construction Compliance 3 Credits
Prerequisite: None This course is an overview of codes, regulations and initiatives governing the modern construction project. The course also explores construction management and its relationship to the process of building. Course is graded on an A-F basis. ARCH-249 Construction Compliance is a new course in the Semester system.

CIVL 241 Statics & Strength of Materials II 2 Credits
Prerequisite: C grade (2.00) or better in CIVL-240. Course is graded A-F. This course includes the study of static forces and equilibrium and the resultant stress, strain, shear and bending considerations in the design and selection of trusses, rectangular beams, built up beams and standard structural members. CIVL-241 replaces CIVIL-241 Statics & Strength of Materials II in the Semester system. Both CIVL-241 and CIVIL-241 replace DDT-3258 Statics & Strengths of Materials II in the Quarter system.

ENGR 205 Engineering Technology Leadership & Supervision 2 Credits
Prerequisite: C grade (2.00) or better in (ENGL-112 or ENGL-110). Course is graded A-F. The course surveys topics related to supervision and leadership in engineering technologies, including management of persons and projects, team building, quality control, productivity, public relations, problem-solving, decision-making, and legal aspects of supervision. ENGR-205 is a new Semester course..

ENGR 279 Engineering Technology Capstone 2 Credits

Prerequisite: Completion of a minimum of 24 semester hours from an Engineering Technologies Plan of Study or permission of the instructor. Course is graded A-F. This is the design capstone course for students in the Architectural, Civil, Electrical and Mechanical Engineering Technologies programs. The course emphasizes small group projects requiring interaction between students from various engineering technology disciplines. The students will use knowledge acquired during the completion of the courses for their engineering technology major, as well as gained knowledge from project work with from other disciplines. The projects will require planning, group participation and collaboration, and efficient use of lab time. Student groups will present their project, both orally and in report form. ENGR-279 replaces courses ENGRTCH-278 Electromechanical Design Capstone (3 credit hours, 9 contact hours - 0 hours lecture and 9 hours lab), ENGRTCH-279 Electronics Design Capstone (3 credit hours, 9 contact hours - 0 hours lecture and 9 hours lab), and ARCH-255 Architectural and Civil Design Capstone (2 credit hours, 6 contact hours - 0 hours lecture and 6 hours lab) in the Semester System.

ENGR 296 Engineering Technology Co-Op 3 Credits

Prerequisite: Completion of a minimum of 24 semester hours from an Engineering Technologies Plan of Study or permission of the instructor. Course is graded A-F. This course offering is composed of work experience in industry under the supervision of an architect, engineer, plant manager, or equivalent, in the student's major area of study. The facility may be chosen by the student with approval of, and coordination with the Engineering Technologies faculty member. This course, to be taken toward the end of the student's two-year program, is designed to give the student real-world, office or industry work experience utilizing the skills acquired earlier in the program. The course acts as a capstone, tying the concepts of the technology together and giving the student valuable job experience before graduation. ENGR-296 replaces ARCH-295 Co-op Experience and ARCH-296 Co-op Experience in the Semester system.

PHIL 200 Introduction to Ethics 3 Credits

Prerequisite: C grade (2.00) or better in ENGL-112. Course is graded A-F. This course explores ethical theories as well as ethical practices. It seeks to develop critical thinking skills as a basis for ethical choice using lectures, open discussion and case studies. A variety of topics will be evaluated in a cultural, social and historical context. PHIL-200 replaces BHS-1340 Ethics in the Quarter system. PHIL-200 meets the Ohio Transfer Module standards for course TMAH. PHIL-200 meets the Ohio Transfer Assurance Guide standards for course OAH046.

Spreadsheet Matrix of Optimal Potential Courses:

The curriculum matrix attached plots out the proposed two-year degree with all classes and corresponding credit hours, and creates theoretical matches with courses offered at the five accredited Ohio schools, and the alma mater of the author.

Should these courses be approved for use, and for articulation, a student will be able to clearly see the transfer potential of the two-year degree at local universities.

2-year Curriculum Matrix: Alignment with OHIO Accredited Schools of Architecture.

Cuyahoga Community College

Proposed Associates of Applied Science (A.A.S.) in ARCHITECTURAL TECHNOLOGIES

Sheet 1: Bowling Green, Cincinnati, Kent State

				CREDITS per COURSE	GSW 120	MATH 1230	Math 1220	PHYS 2010	CONS 2350	ARCH 1050	ARCH 2050	ARCH 2020	ARCH 2710	ARCH 2360	ARCH 2330	ARCH 2340	SAID 1001	SAID 1011	SAID 1031	Elective	Elective	SAID 1002	SAID 1012	SAID 1021	SAID 1061	PD 1021	SAID 2001	ARCH 3014	SAID 3071	ENGL 2089	COOP Semester	AED 10001	AED 10101	MATH 12001	MATH 12011	US 10097	Elective	Elective	AED 10002	AED 10102	ARCH 10111	MATH 12002	MATH 12012	Elective	Elective	Elective	ARCH 20101	ARCH 20112	PHY 13001	ARCH 20102	ARCH 20113	ARCH 20201	ARCH 20301	ARCH 20602	PHY 13012	CREDITS per SEMESTER	PROFESSIONAL (MAJOR)	GENERAL (GEN. ED.)	ELECTIVE
					Bowling Green State University												University of Cincinnati														Kent State University																															
FIRST YEAR - Emphasis on Principles and Technologies of Graphic Communication																																																															
Fall	OMT (Math and Statistics)	MATH-1510	Trignonometry	4																																																															
	OET (Engineering Technologies)	CNST-2xxx	Construction Materials & Methods I	3					●																																																							
	Major	ARCH-2xxx	Architectural History I	3											●																																																		
	Major	ARCH-1xxx	Architectural Graphics I (Manual)	3						●								●																																															
	Major	ARCH-1120	Architectural Computer Drafting	3																																																													
																																																																16	9	7	0
Spring	OEN (English Composition)	ENG-1010	College Composition I	3	●																●																																															
	OMT (Math and Sciences)	MATH-1521	College Algebra	3			●																																																											
	OSC (Natural & Physical Sciences)	PHYS-1210	College Physics I	4				●																																																								
	Major	ARCH-2xxx	Architectural History II	3												●																																																	
	Major	ARCH-1xxx	Architectural Graphics II (Manual)	3							●													●																																									
																																																																16	6	10	0
SECOND YEAR - Emphasis on Form, Tectonics, and Contextual Relationships																																																																	
Fall	OMT (Math and Sciences)	MATH 1610	Calculus	4		●																																																										
	ORE (Renewable Energy)	ORE-001	Introduction to Renewable Energy	3																																																											
	Major	ARCH-2xxx	History of Architecture III	3																				●																																								
	Major	ARCH-16xx	Statics for Architects	3																																																											
	Major	ARCH-2xxx	Architectural Design Studio I	5								●															●																																			
																																																																18	9	9	0
Spring	OEN (English Composition)	ENG-2151	Technical Writing	3																											●																																	
	Major	COURSE	Preparation for Architectural Co-Op	1																						●																																				
	Major	ARCH-2xxx	Building Information Modeling (BIM)	3									●														●																																			
	Major	ARCH-2xxx	Building Structures	3																																																										
	Major	ARCH-2xxx	History of Architecture IV (World)	3																										●																																
	Major	ARCH-2xxx	Architectural Design Studio II	5																																																									
																																																															18	15	3	0
SUMMER SEMESTER - Co-operative Education																																																																	
	Major	COURSE	Co-op Term with Architecture Firm	2																										●																																		
																																																															2	2	0	0
					37 Credits in common with first two years at Bowling Green												**29** Credits in common with first two years at University of Cincinnati															**39** Credits in common with first two years at Kent State University																															
THIRD YEAR - Emphasis on Technical Factors in Design																																																																
FOURTH YEAR - Emphasis on Cultural Expansion and Urban Patterns																																																														
FIFTH YEAR - Emphasis on Integration of Systems, Sustainability and Responsible Professional Practice																																																													
				70																																																													
																																																															70			
																																																																41		
																																																																29		
																																																																0	

2-year Curriculum Matrix: Alignment with Accredited Schools of Architecture.

Sheet 2:
Miami,
Ohio State,
Detroit - Mercy

Cuyahoga Community College

Proposed Associates of Applied Science (A.A.S.) in
ARCHITECTURAL TECHNOLOGIES

				CREDITS per COURSE	ARC 101 Beginning Design Studio	ARC 102 Beginning Design Studio II	ARC 113 Methods of Presentation	ARC 114 Methods of Presentation II	ENG 111 Composition and Rhetoric	ENG 112 Composition and Literature	ARC 201 Architecture Studio	ARC 202 Architecture Studio II	ARC 211 Landscape and Urban Design	ARC 212 Environmental Systems	ARC 213 Graphic Media III	ARC 214 Graphic Media IV	ARC 221 History of Architecture I	ARC 222 History of Architecture II	Elective Foundation Course Elective	Elective Thematic Sequence Elective	ARCH 1100 Survey of Architecture	ARCH 2300 Outlines of the Built Environment	ARCH 2310 Introduction to Design	MATH 1148 College Algebra	ENG 1110 Writing Fundamentals	PHY 1100 College Physics	MATH 1118 Math for Architects	ARCH 2410 Architectural Design	ARCH 5610 Architectural Representation I	ARCH 5110 History of Architecture I	GE Writing General Elective Writing II	ARCH 2420 Architectural Design II	ARCH 5620 Architectural Representation II	ARCH 5120 Architectural History II	GE Lit General Elective Literature	ARCH 1100 Architectural Design I	ARCH 1110 Visual Communications I	ARCH 1190 Introduction to Architecture I	ENL 1310 Academic Writing	MTH 1400 Elementary Functions	PHL 1000 Introduction to Philosophy	ARCH 1200 Architectrual Design II	ARCH 1210 Visual Communications II	ARCH 1290 Introduction to Architecture II	ARCH 2130 Principles of Structural Behavior	Elective Natural Science	ARCH 1300 Architectural Design III	ARCH 2160 3D Computer Graphics	ARCH 2120 Architectural History and Theory I	ARCH 2330 Structures I	ARCH 2140 Ecological Design	ARCH 2190 Introduction to Architecture III	ARCH 1400 Architectural Design IV	ARCH 1160 Computer Graphics	ARCH 2220 Architectural History and Theory II	ARCH 2430 Structures II	ARCH 2430 Environmental Technology I	CREDITS per SEMESTER	PROFESSIONAL (MAJOR)	GENERAL (GEN. ED.)	ELECTIVE
					University of Miami of Ohio																Ohio State University															University of Detroit - Mercy																									
FIRST YEAR - Emphasis on Principles and Technologies of Graphic Communication																																																													
Fall	OMT (Math and Statistics)	MATH-1510	Trignonometry	4																																																									
	OET (Engineering Technologies)	CNST-2xxx	Construction Materials & Methods I	3																																																								
	Major	ARCH-2xxx	Architectural History I	3													●													●																				●												
	Major	ARCH-1xxx	Architectural Graphics I (Manual)	3			●																														●																									
	Major	ARCH-1120	Architectural Computer Drafting	3											●														●																									●							
																																																										16	9	7	0
Spring	OEN (English Composition)	ENG-1010	College Composition I	3					●																●														●																								
	OMT (Math and Sciences)	MATH-1521	College Algebra	3															●					●																																						
	OSC (Natural & Physical Sciences)	PHYS-1210	College Physics I	4																●																																										
	Major	ARCH-2xxx	Architectural History II	3														●																●																						●						
	Major	ARCH-1xxx	Architectural Graphics II (Manual)	3				●																									●										●																			
																																																									16	6	10	0
SECOND YEAR - Emphasis on Form, Tectonics, and Contextual Relationships																																																												
Fall	OMT (Math and Sciences)	MATH 1610	Calculus	4																							●													●																						
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	Major	ARCH-2xxx	Architectural Design Studio I	5	●																							●								●																										
																																																										18	9	9	0
Spring	OEN (English Composition)	ENG-2151	Technical Writing	3																											●																															
	Major	COURSE	Preparation for Architectural Co-Op	1																																																										
	Major	ARCH-2xxx	Building Information Modeling (BIM)	3												●																																	●												
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	Major	ARCH-2xxx	History of Architecture IV (World)	3																																																										
	Major	ARCH-2xxx	Architectural Design Studio II	5		●																										●										●																						
																																																									18	15	3	0
SUMMER SEMESTER - Co-operative Education																																																													
	Major	COURSE	Co-op Term with Architecture Firm	2																																																							2	2	0	0
					38 Credits in common with first two years at Miami of Ohio																**35** Credits in common with first two years at Ohio State University															**38** Credits in common with first two years at the University of Detroit - Mercy																									
THIRD YEAR - Emphasis on Technical Factors in Design																																																													
FOURTH YEAR - Emphasis on Cultural Expansion and Urban Patterns																																																													
FIFTH YEAR - Emphasis on Integration of Systems, Sustainability and Responsible Professional Practice																																																													
				70																																																						70	41	29	0

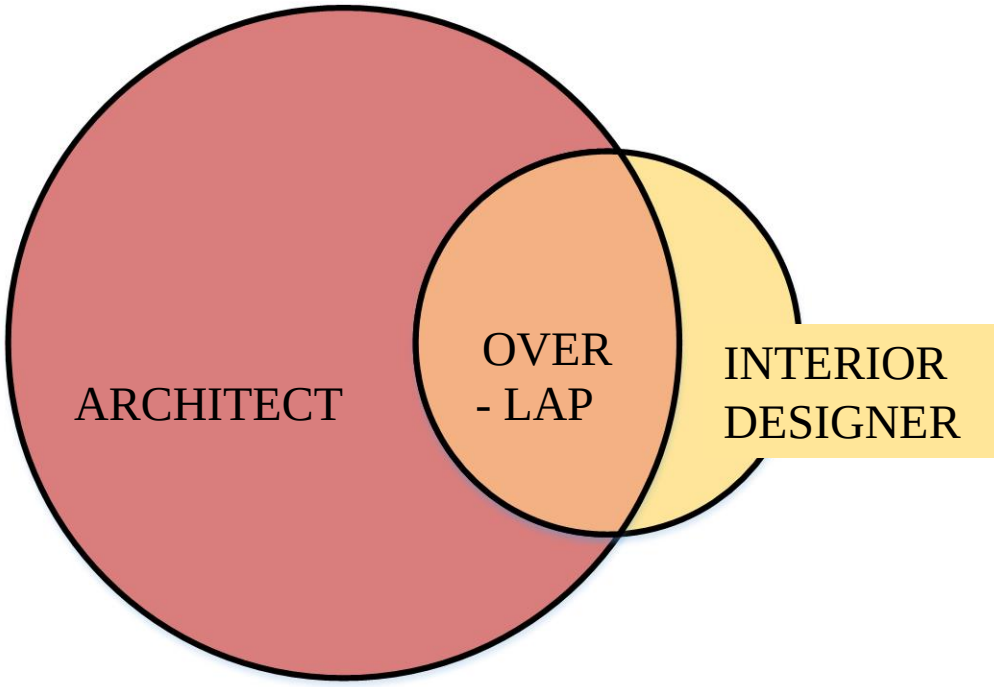
Interior Design – Integration in a Broader Context:

The course should be designed with a certain awareness of how it can best be integrated with the existing interior design program. This exercise is not fully undertaken in the context of this report out of respect of the current instructors of the college's current interiors department. Rather, this should be taken as an invitation to dialogue on how best to identify coursework with significant overlap, and to discussions on how instructors and students from each discipline can best enter into fulfilling partnerships and collaborations.

To introduce the topic, the areas of professional responsibility are outlined here:

REGISTERED ARCHITECT:
5+ year professional degree
2 year internship
26.5 hours of testing

INTERIOR DESIGNER:
2 year degree with 60 hours minimum
2 year internship
15 hours of testing



ARCHITECT REQUIRED KNOWLEDGE
1) Site planning and design
2) Programming and building planning
3) Schematic design processes
4) Building construction systems
5) Mechanical, electrical, and specialty systems
6) Structural systems
7) Construction documents
and
8) Business and Professional Practice

INTERIOR DESIGNER KNOWLEDGE
1) Residential and Commercial layout
2) Programming and interiors planning
3) Schematic design processes
4) Furnishing, finishes, and lighting
5) Purchasing and vendors
6) Construction documents for interiors
and
7) Business and Professional Practice

Architects and interior designers often undertake tasks more commonly done by the other's discipline in everyday practice. That said, certain statements about the areas of their expertise are fundamental, and are important to note in making a selection of a field of study, or in fact in choosing to hire one or the other professional.

Architects must balance the aesthetic with the technical. As such, they need to master a broad base of technological knowledge about how buildings stand up and how the various systems within them are assembled and operate. The underpinnings of this knowledge is scientific and mathematical in nature, and thus architects are commonly called upon to work with formulas for the completion of their drawings. Also, architects are usually consulted for site analysis, the provisions of site design, and the surroundings of buildings. Most crucially, over the course of a design endeavor, architects coordinate the activities of numerous consultants, including specialists in soils engineering and hydrology, civil designers for roads and piping, structural, mechanical, and electrical engineers, specialists in fire detection and response, and sustainable systems designers. Architects are indeed the quarterbacks of the design team.

Interior designers are crucial players in design efforts. By nature of their study and discipline, Interior Designers ordinarily develop a great sensitivity to the human response to interior spaces. As such, their aesthetic sensibilities must include a sense of proportion and spatial depth, an understanding of personal movement through a space, natural lighting and the vast array of artificial lighting, textures and colors and their effects on materiality, the human scale of furnishings and fixtures, and the gestalt of these elements perceived as one. Their technical knowledge lends itself to the understanding of the qualities of finishes, especially soft ones such as fabrics and coverings, and a full knowledge of the design and availability of furnishings. Through their close relationships with vendors and suppliers, interior designers are excellent communicators, who are able to bring the vision of a project to full culmination.

Both disciplines require project coordination, and interpersonal skill with clients. Professional practice, and its ethical and legal grounds, is foundational for each.

Exploration: Teaching Goals

First, we must strive to establish an understanding of whom this program would serve, characteristics that are shared by both architects and their protégés in the profession. These should be established as benchmarks for the development of the program.

Who are we serving in such a program? Individuals come to our profession by their acumen, but more crucially by their own personal interests. The Strong-Campbell interest survey states that certain individuals share the following interest areas and thus feel at home in Architecture: **R** – Realistic: Enjoy the outdoors; the workings of the physical, tangible, real world; concrete problems; ingenuity and mechanical ability; and common sense. **I** – Investigative: Enjoy analysis, abstract reasoning, independent research and writing. **A** – Artistic: Take pleasure in creative, innovative, imaginative self-expression.

First Goal: Appeal to the REAL. Architecture students must meet and embrace the tangible.

First, the site must exist. They must venture to the site the very first day of class, shift the sands, scan the horizon, move through every adjacent building and space, and thrust themselves into the history of the place. As soon as possible young architects need to start tearing into physical materials from cardboard to wood to metal, and make scrap models to express their ideas. The grit of charcoal on the fingers while making large drawings with arm fully extended, these motions bespeak the pure physicality of the endeavor, and are too often forgotten when digital methods are undertaken immediately. Using a computer is crucial beyond measure, but architecture is for the human body, experienced by the body, so it must first be taught through the body.

Second Goal: Establish the MIND. Architecture students must process complexity into unity.

Information of the natural and human made landscape abounds, and needs to be uncovered, gathered, sifted, and ordered. All matters are researched: all those concerning the actual site, the needs of the community, the dreams of the culture, the requirements of the owner, the limitations of material economics, and the assemblies of the materials of construction. That last point is of special merit, as the integration of envelope, building services, structural system, interior spaces, and the site makes for a task that begins as abstraction, but culminates in a built physical system. As Kahn states, the Architecture begins with the unmeasurable, goes through measurable means when being designed, and in the end must be unmeasurable.

Third Goal: Free the SOUL

Architecture students can design in a spirit of adventure, freedom, and fun. Ultimately, this is why we are endeared to the profession. Communicating freely, all by playing with points, lines, planes, colors, and shapes in brand new ways. Taking risks, and making mistakes, overextending our limitations, and ending up with new and unexpected poems. Architecture is important, responsible, and serious. But its heart is pure, creative joy.

Exploration: Teaching Philosophy

DESIGN - THEORY:
In "De Architectura," Vitruvius' dictum concerns the three principles of quality in architecture: UTILITAS (Firmness), VESTAS (Commodity), and VENUSTAS (Delight). These benchmarks for design have been stated in numerous ways, but all point towards a balanced view of architecture as both a technical and an aesthetic discipline.

Polish Architect Jerzy Staniszkis (Warszawa Politechnika and University of Detroit), gave an interpretation of this dictum in his 1975 publication "Chalk Talks." His is an approach to architectural design that strives for a tripart balance between:
• **Technology (for Firmness)** in the advancement of modern construction, structural techniques, and a natural approach to sustainability.
• **Sciences (for Commodity)** in the perfection of function in the design and organization of spaces with proper relation to users and the environment.
• **the Arts (for Delight)** in the development of appropriate form. Buildings indeed must be beautiful to the senses.

When these three elements are in harmony, truly superior designs result. This thinking is imparted to students via their rubrics so they stress each element in their designs. The result: building designs that are constructible, with logical and well-organized spaces, and with unified overall aesthetics.

PRE-DESIGN - STRATEGIES: Students often tend to jump into "form first" without considering design problems in full depth. This mode of "proposing an answer before first composing a question" is widespread in the profession also. This often results in imaginative design, but design that adheres to an abstract, fixed, arranged concept instead of a real, organic human need. Developing an understanding of project and site needs results in appropriate designs. I guide students through numerous steps in design, as follows:
SITE: Visiting the site is mandatory. Students learn kinesthetically from walking over the site, moving about it, observing it. ANALYSIS: Again, this is made directly. Students produce diagrams of the site in two, three, and four dimensions (documenting the site over time). SUN, WIND, LIGHT are all documented, as well as access, the natural and man-made environs, and views.
Students all the while produce images depicting the haeccity of site (its distinct nature and sense of place) and the phenomenal, sensory, and temporal experience of the site.
To respond deeply, the response must be direct, personal, visceral, and from the gut.
RESEARCH: This should be individual, per student interest. First additive, open with minimal structure. Then subtractive, in discerning which information is most relevant.
PROGRAMMING: Creative programming, emphasizing character of spaces as well as size. Part of programming includes diagramming shapes and volumes. Diagrams, sketches, and loose impromptu character studies all aid "seeking the problem." We strive to make programming qualitative as well as quantitative.

DESIGN - IMPLEMENTATION: The basis for thoughtful design is in the application of Stanizski's tri-part approach with careful steps towards ***integrated design***, as outlined in Leonard Bachman's text on Integrated Buildings: The Systems Basis of Architecture. The interdisciplinary process of integrated design calls for cooperation between architects and consultants early in the process, and stresses sustainable design and high performance buildings. This approach is utilized at the university level, specifically for capstone projects. Some studios organize the program in the form of a competition, such as Kent State, which requires students produce full sets of design development drawings along with models and presentation boards. Students proceed through the tri-part approach, with each step an integration into a holistic solution.

• **Technology** – Firmness is imparted via the design of appropriate building systems and structure, with applied research. Emphasis is first on proper site placement and orientation, and next on systems that simply use less energy to run. Experimental approaches are also encouraged; after all, there is no material cost for a theoretical project. Green technologies are integrated as a rule, not the exception.

• **Sciences** – Commodity is imparted via utilization of bubble diagrams first to establish relationships and placements, then block diagrams to establish orientations, sizes, and to begin strategizing volume.

• **the Arts** – Delight is ensured through a wide array of artistic activity. In a recent fall term, all students completed conceptual sketches in watercolor, and decided to compose all final presentation drawings in the same medium. Modeling three-dimensionally by hand is fruitful for both rough sketch models, and finished design models. Artistic motifs can instill proportion in the design, and can be carried throughout the multiple scales of a building, from the level of the entire site, to the broad strokes of the building form and outline, to the human scale, to the details of the building. Details should be provided at three points: Connections, Intersections, and Terminations. From these junctures, the entire building can be described.

DESIGN - PRESENTATION: Students are encouraged to use all the tools at their disposal, from the crudest charcoal sketch to the most sophisticated parametric three-dimensional modeler and animation. Architects should be exposed to and versed in the full array of presentation techniques used throughout the history of their profession, all until the present day.

ARCHITECTURAL HISTORY – An Understanding for the Practitioner

WHEN ONE walks through monumental sites of the past, gathers them in with all the senses, and feels the sweat on the brow and the earth, clay, and stone trodden below, at this time one is ready to impart the experience. So many architecture instructors strive to undertake a series travels, generally progressing from the beginnings of architecture onwards. Then these are brought back to the classroom. Students are engaged, and brought into a discourse and exchange of ideas.

These are some crucial points worth imparting to future design practitioners:

• Peoples: The individuals and cultures responsible for the creation of the monuments.
• Planning: How the designs were conceived, communicated, drawn.
• Construction: How the monuments were erected, and the materials and methodologies used.
• Context: How do these works impact the context in the arc of history? What critical points of advancement are made in this continuum?
• Rationale: The underlying reasons for the creation of these buildings.

Also, of particular interest to students:

• Architects and works that illustrate the progression of our profession, from the first division of labor in Paleolithic times, to the master masons, to the current state of the profession in the modern day. M.S. Briggs and Spiro Kostof and others have each assembled great texts on this. This is an ideal starting point for divining what direction our profession will take in future years and epochs, and worth our intellectual powers to deeply consider.

• Students can delve into the works of local architects, including those that illustrate the developing patterns of urban space in Northeast Ohio, and those who are working in the modern epoch to forge these spaces anew. Work in architectural history helps students realize the broader value of their future projects in the context of all that has been undertaken before them.

• Discussions with students about the crescendos and declines of entire civilizations, as seen through the lens of architectural history. These are pivotal arguments, and points of reference when examining the value of current, contemporary architecture in light of great works of old. Student assignments are most often kinesthetic, and involve learning local landmarks firsthand and comparing these in words and diagrams with projects of the past from the current chapters. Students grapple with ancient or old projects much more readily when they can compare some aspect with a familiar building in their neighborhood. The most successful assignment, developed across several institutions, is an analysis report comparing a local work with one of the past through writing, drawings, and diagrams. Writings include a history of each building and a formal comparison, as well as specific points in common in plan, structure, and detaining. Diagrams are based, in part, on the book **Precedents in Architecture** by Clark and Pause.

Additional investigations:

Personal meetings with Deans of the five accredited schools would be advantageous to the acceptance of the program, and its continued prosperity.

These would include:

Dr. Venu Dasigi, Architecture Interim Dean, Bowling Green State University

Mary Rogero, Architecture and Interior Design Interim Chair, University of Miami

Michael B. Caldwell, Director, Knowlton School of Architecture at
The Ohio State University

Robert Probst, Dean of College of Architecture, Art, and Planning,
University of Cincinnati

Douglas Steidl, Dean of College of Architecture and Environmental Design,
Kent State University

The last person mentioned here, Dean Steidl, is former President of the NAAB, National Architectural Accreditation Boards. I have developed a solid and collegial relationship with Dean Steidl while assembling documents for an emerging program in the Caribbean, and could depend on his cooperation and guidance on this endeavor.

Meetings with members of the aforementioned two-year programs would also be valuable in the information – gathering phase of program development.

Another crucial point in the process would be entail making contact with the numerous architectural practices in northeast Ohio. Nearly 300 of these are in the Greater Cleveland area, and over 100 in the Akron-Canton region. A successful survey of these could reveal the specific needs best served by a new two-year program. The survey would indicate which building types are most popular, which construction types are most commonly utilized, and could even pinpoint the specific software programs firms use most often. Survey information could be bolstered with personal visits to a cross section of firms. These dialogues have the further purpose of cementing relationships with leaders in the local design community.

Finally, the program would need outreach, in the form of a viable marketing plan to reach students in area high schools. Mailings and invitations through the internet work well, but neither of these would succeed as well as an effective speaker making presentations, drawing from a wide array of experiences in the trenches – in architectural classrooms, studios, and offices. These lectures would duly light the spark in a next generation of drafters and designers, and fill the courses of Cuyahoga Community College to capacity.

About the Author:

Christopher Lobas has dedicated over twenty years to designing singularly attractive places for homes, churches, schools, workplaces, hospitality, and mixed-use projects. While undertaking these projects, he has taught over eight hundred students design, architectural history, construction, freehand drawing and computer drafting.

Mr. Lobas was born and raised in Cleveland, Ohio. His introduction to Architecture was by way of the building trades, and while still in high school gained valuable experience on construction sites working with family members on carpentry, plumbing, and site labor. This work was balanced by a solid Jesuit education at Saint Ignatius High School in Cleveland.

His Jesuit training continued at the University of Detroit, where he gained his undergraduate and graduate degrees in Architecture. From there, his work spanned across the country. He obtained architectural licensure in Colorado, where he worked with firms specializing in custom residential design and hospitality and resort design. He has both designed projects independently and contributed to design teams on large, multi-million dollar resort projects. He is registered nationally through NCARB and in six states, and is a LEED Accredited Professional.

Mr. Lobas continues to share the practical knowledge he gained as a seasoned designer with students at universities and trade schools. He has taught classes at the University of Colorado, the University of Utah, the Westwood College Institute of Design, and at the State University of New York, Kent State University, Cleveland State University, The College of The Bahamas, and within the Texas College System.

He has taught courses in:
Architectural Design, including introductory, capstone, and graduate levels
Design Graphics, including figure drawing, site drawing, and watercolors
Architectural History, from the beginning of time to the current day
Historic Preservation, with numerous field excursions
Digital Design, with various software, including BIM
Construction Technologies, Materials and Methods
Design Business Ethics and Practice

His firm currently provides Architectural Services in:
Custom Residential Projects
Industrial and Business Buildings
Ecumenical Design – Churches and Associated Projects
Institutional Design – Schools and University Projects
Hospitality and Resort Design
Historic Preservation and Adaptive Reuse
Rendering, Freehand and Digital

See portfolio at: www.LobasArch.com