

	R' and U's R=required U= Useful	Gen Ed courses	Introduce in Gen Ed course; reinforce in the major.	Required courses /labs in the major	Electives in the major/related fields	Internship or clinical experience	Co-curricular or extra- curricular activities	Not sure
E-commerce								
<i>Project Management</i>	R			PROF. PRACTICE				
<i>Marketing of Services</i>	R			PROF. PRACTICE				
<i>Financial management</i>	U	BS/SS (AAS, BTECH)		3561				
<i>Contractual</i>	R			3561				
<i>Obligations/ Liability</i>	R			3561				
Organizational Design								
Mathematics/ Quantitative Reasoning								
Basic math: calculate averages, use proportions, convert measurements	R-AAS			1110, 1191 BLDG. TECH SUSTAINABILITY STRUCTURES	3550			
Algebra	R-AAS	MAT 1275		BLDG. TECH				
Trigonometry	R-AAS	MAT 1275 (R- AAS; MAT 1375 (R- BTECH)		BLDG. TECH SUSTAINABILITY STRUCTURES	3550			
Geometry/spatial	R			1110, 1191, 1130,1210, 1291, 1230				
Calculus								
<i>Statistics/probability</i>								
Accounting	U							
<i>Differential equations</i>								
<i>Linear algebra</i>								
<i>Discrete math</i>								
Analytical mathematics								
Quantitative reasoning								
Global/cultural knowledge								
Foreign language								
Specific cultural knowledge	U		Arch 2321 (LAP-AAS); BS/SS (AAS,	HISTORY				

	R' and U's R=required U= Useful	Gen Ed courses	Introduce in Gen Ed course; reinforce in the major.	Required courses /labs in the major	Electives in the major/related fields	Internship or clinical experience	Co-curricular or extra- curricular activities	Not sure
			BTECH)AAS)					
Geography	U			1250, 1210 (GIS)				
Respect for diversity	R		Arch 2321 (LAP-AAS); BS/SS (AAS, BTECH)	ALL	3611, 3591,4709, 4900			
Knowledge of global issues	U	BS/SS (AAS, BTECH)			3550			
Current events	U	BS/SS (AAS, BTECH)		1250	3550			
Popular culture								
Global environment	R			1250	3550			
Cultural history	R-AAS		Arch 2321 (LAP-AAS); BS/SS (AAS, BTECH)	HISTORY				
History of visual arts	R		Arch 2321 (LAP-AAS); LAP (BTECH)	HISTORY; STUDIOS	3611			
History of technology	R-AAS		Arch 2321 (LAP-AAS)	HISTORY, BLDG- TECH-1130, 1230, 2430	3550			
Philosophy of Technology								
History (general)	R		Arch 2321 (LAP-AAS); BS/SS (AAS, BTECH)	HISTORY				
Science/ scientific knowledge								
Scientific method- experimentation/ observation; recording and processing of data.	R		PHYS 1433 OR PHYS 1441 (AAS); PHYS 1434 OR PHYS 1442	1250; 2410, 3511, 4811, FMGT 4880	3611			
Chemistry (Materials)	R-AAS				3550			
Physics (Statics)	R-AAS		PHYS 1433 OR	STRUCTURES	3550			

	R' and U's R=required U= Useful	Gen Ed courses	Introduce in Gen Ed course; reinforce in the major.	Required courses /labs in the major	Electives in the major/related fields	Internship or clinical experience	Co-curricular or extra- curricular activities	Not sure
SKILLS-- DEVELOP AND USE THE TOOLS NEEDED FOR COMMUNICATION, INQUIRY, ANALYSIS, AND PRODUCTIVE WORK								
Communication --Communicate in diverse settings and groups, using written (both reading and writing), oral (both speaking and listening), and visual means, and in more than one language.								
Reading								
*General Reading	R	ENG 1101; LIT, LAP (BTECH)						
*Applications								
Technical articles/ manuals/Case Studies	R			1230, 2330, 2430, 4740	3550			
Financial reports								
Directions and procedural texts	U			1110,1191, 1210, 1230, 1291, 2430	3290, 3609, 4709			
Theoretical/conceptual	R			3511	3611			
Visual texts /media	R		Arch 2321 (LAP-AAS)	ALL	3611, 3591,4709, 4900			
Diagrams	R			STUDIOS	3611			
Read for details	R		Arch 2321 (LAP-AAS)	ALL	3611, 3591,4709, 4900			
Read for big picture concepts, themes	R		Arch 2321 (LAP-AAS); ENG 1101; LIT, LAP (BTECH)	ALL	3611, 3591,4709, 4900			
Literature		Some indication of the skill of reading a variety of different types of text						
Vocabulary--Connotation as well as denotation			Arch 2321 (LAP-AAS); ENG 1101; LIT, LAP (BTECH)	ALL	3611, 3591,4709, 4900			
Building codes and law	R			3662, 1250, 1230, 2330, 2430, 2410, 3511, 4811,	3611			

	R' and U's R=required U= Useful	Gen Ed courses	Introduce in Gen Ed course; reinforce in the major.	Required courses /labs in the major	Electives in the major/related fields	Internship or clinical experience	Co-curricular or extra- curricular activities	Not sure
				FMGT 4880				
Codes and ¹ Standards	R			2330				
Regulatory/legal requirements	R			3561				
Communication skills (content, audience, purpose, conventions)								
Oral communication								
Listening	R		ALL	ALL	3611, 3591,4709, 4900			
Speaking [formal, meeting, one- on-one]	R		Arch 2321 (LAP-AAS); COMM (AAS, BTECH)	ALL	3611, 3591,4709, 4900	4900		
Comportment	R		Arch 2321 (LAP-AAS); COMM (AAS, BTECH)	ALL	3611, 3591,4709, 4900	4900		
Visual								
Graphic representation/ visualization	R		Arch 2321 (LAP-AAS)	ALL	3611, 3591,4709, 4900			
Written								
*General								
Incorporate information from sources	R		Arch 2321 (LAP-AAS); ENG 1101; LAP (BTECH)	BLDG. TECH, 3522, STUDIOS	3550, 3611			
Persuasion/ argument	R		COMM (AAS, BTECH)	STUDIOS	3611			
Description	R		Arch 2321 (LAP-AAS);	HISTORY, STUDIOS	3611			

¹ This is a proposed category to replace Building codes and laws – it is designed to be more general (John McCullough). A similar idea was proposed in SPS –“regulatory/legal requirements”

	R' and U's R=required U= Useful	Gen Ed courses	Introduce in Gen Ed course; reinforce in the major.	Required courses /labs in the major	Electives in the major/related fields	Internship or clinical experience	Co-curricular or extra- curricular activities	Not sure
			ENG 1101					
Analysis/Case Studies	R		Arch 2321 (LAP-AAS)	HISTORY, STUDIOS,2430	3611			
*Applications								
Write an RFP or creative brief	R			1121, PROF. PRACTICE				
Business communication	R			PROF. PRACTICE 2430, BLDG. TECH.				
Technical reports	R			BLDG. TECH.	3550			
Field notes	R			STUDIOS,1250	3611			
Business plan	U	BS/SS (AAS, BTECH)		PROF. PRACTICE				
Process Skills								
Critique writing and presentations	R		Arch 2321 (LAP-AAS)	STUDIOS, HISTORY, 2330, 2430	3611			
Build on the original idea to get the best solution	R			STUDIOS	3611			
Obtain and use feedback	R		Arch 2321 (LAP-AAS)2321	STUDIOS, HISTORY, BLDG. TECH, 1250	3611			
Memorization	R							
Synopsise Meeting notes-- >crucial information	R		Arch 2321 (LAP-AAS)	STUDIOS, HISTORY	3611			
Media Skills								
Teleconferencing	U			3609				
Web design	U							
Participatory Media (user- generated content: blogs, wikis, social networking, etc.)	U			Varies by professor				
Computer skills								
Word processing	R-AAS		Arch 2321	ALL	3611,			

	R' and U's R=required U= Useful	Gen Ed courses	Introduce in Gen Ed course; reinforce in the major.	Required courses /labs in the major	Electives in the major/related fields	Internship or clinical experience	Co-curricular or extra- curricular activities	Not sure
			(LAP-AAS); ENG 1101		3591,4709, 4900			
Spreadsheet	R-AAS			1191				
Data base								
SPSS								
Presentation	R-AAS			STUDIOS	3611			
Photoshop	R-AAS			STUDIOS	3611			
CAD	R-AAS			STUDIOS	3611			
Information technology	R		Arch 2321 (LAP-AAS)	HISTORY				
Networking								
Internet security								
Adapt to new software and applications	R			1250, BLDG. TECH.	3591, 4709, 3611, 3550			
scheduling	U			1191, 3561, 1230, 2330, 2430				
2D and 3D drafting/modeling software; 3D rendering software; parametric modeling; BIM;				STUDIOS	3591, 4709, 3611, 3290			
Principles of software design/ functionality [Knowledge??]				1110, 1191,1210,	3591, 4709, 3290			
Inquiry/analysis skills								
<ul style="list-style-type: none"> ▪ Derive meaning from experience, as well as gather information from observation. ▪ Understand and employ both quantitative and qualitative analysis to describe and solve problems, both independently and cooperatively. ▪ Employ scientific reasoning and logical thinking ▪ Use creativity to solve problems. 								
Identify appropriate sources for a task	R		Arch 2321 (LAP-AAS)	ALL	3611, 3591,4709, 4900	4900		
Search library/internet resources	R-AAS		ENG 1101	STUDIOS, BLDG TECH	3611			
Evaluate sources	R-AAS		Arch 2321	HISTORY, BLDG				

	R' and U's R=required U= Useful	Gen Ed courses	Introduce in Gen Ed course; reinforce in the major.	Required courses /labs in the major	Electives in the major/related fields	Internship or clinical experience	Co-curricular or extra- curricular activities	Not sure
			(LAP-AAS); BS/SS (AAS, BTECH)	TECH				
Use databases to research a company's financial profile								
Research methods	R		Arch 2321 (LAP-AAS); ENG 1101; BS/SS (AAS, BTECH)	STUDIOS HISTORY BLDG TECH	3611 3550			
Data Analysis	R			STUDIOS BLDG TECH	3550			
★ Computational Skills								
Problem Solving	R-AAS		MAT 1275 (R- AAS; MAT 1375 (R- BTECH); PHYS 1433 OR PHYS 1441 (AAS); PHYS 1434 OR PHYS 1442	ALL (EXCEPT HISTORY, 3709, 4709)	3611 3550			
Choose applicable equations/ principles	R-AAS		MAT 1275 (R- AAS; MAT 1375 (R- BTECH); PHYS 1433 OR PHYS 1441 (AAS); PHYS 1434 OR PHYS 1442	1230, 1250, 2370, 2480, 4880, BLDG. TECH.	3550			
Math applications	R-AAS		MAT 1275 (R- AAS; MAT 1375 (R- BTECH); PHYS 1433 OR PHYS 1441 (AAS); PHYS 1434 OR PHYS 1442	SUSTAINABILITY STUDIOS, BLDG TECH	3611 3550			
Graphing	R-AAS		MAT 1275 (R- AAS; MAT	2480, 4480, SUSTAINABILITY	3550			

	R' and U's R=required U= Useful	Gen Ed courses	Introduce in Gen Ed course; reinforce in the major.	Required courses /labs in the major	Electives in the major/related fields	Internship or clinical experience	Co-curricular or extra- curricular activities	Not sure
			1375 (R- BTECH); PHYS 1433 OR PHYS 1441 (AAS); PHYS 1434 OR PHYS 1442					
Social/interpersonal Skills								
Collaboration/ Teamwork	R			BLDG TECH, STUDIOS, PROF.PRACTICE 1250				
Crisis/ conflict management	U							
Leadership	R			BLDG TECH, STUDIOS, PROF.PRACTICE 1250				
Networking	R			PROF.PRACTICE, 4900				
Customer / client/patient service	R			PROF.PRACTICE, 4900				
Cultural sensitivity	U							
Awareness of social cues, language, gesture, etc.	R			STUDIOS				
Time management	R		Arch 2321 (LAP-AAS)	ALL	3611, 3550, 3591, 4709, 3290			
Set priorities	"		"	"	"			
Reflection-self-assessment	"		"	"	"			
Thoroughness	"		"	"	"			
Punctuality	"		"	"	"			
Accountability	"		"	"	"			
Work ethic	"		"	"	"			
Discipline	"		"	"	"			
Focus	"		"	"	"			
Accuracy	"		"	"	"			
Persistence	"		"	"	"			

Value

	R' and U's R=required U= Useful	Gen Ed courses	Introduce in Gen Ed course; reinforce in the major.	Required courses /labs in the major	Electives in the major/related fields	Internship or clinical experience	Co-curricular or extra- curricular activities	Not sure
Expectation of/ readiness for continued learning	"		"	"	"			
Professional culture	Value							

INTEGRATION--WORK PRODUCTIVELY WITHIN AND ACROSS DISCIPLINES.

Information literacies

1 1.5 2 3

- Gather, Interpret, evaluate, and apply information discerningly from a variety of sources.

	R		Arch 2321 (LAP-AAS); BS/SS (AAS, BTECH); LAP (BTECH)	ALL	3611, 3550, 3591, 4709, 3290			

Systems

- Understand and navigate systems

Integrate learning

- Resolve difficult issues creatively by employing multiple systems and tools.
- Make meaningful and multiple connections among the liberal arts and between the liberal arts and the areas of study leading to a major or profession.

VALUES, ETHICS, AND RELATIONSHIPS--UNDERSTAND AND APPLY VALUES, ETHICS, AND DIVERSE PERSPECTIVES IN PERSONAL, PROFESSIONAL, CIVIC, AND CULTURAL/GLOBAL DOMAINS.

Professional/Personal development

- Demonstrate Intellectual honesty and personal responsibility.
- Discern consequences of decisions and actions
- Demonstrate intellectual agility and the ability to manage change.
- Work with teams, including those of diverse composition. [Build consensus.](#)
- Respect and use creativity.

Remove or substitute another word

	R		Arch 2321 (LAP-AAS)	ALL	3611, 3550, 3591, 4709, 3290			
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	R' and U's R=required U= Useful	Gen Ed courses	Introduce in Gen Ed course; reinforce in the major.	Required courses /labs in the major	Electives in the major/related fields	Internship or clinical experience	Co-curricular or extra- curricular activities	Not sure
Ethics/values								
<ul style="list-style-type: none"> Transform information into knowledge, and knowledge into judgment and action. Assume responsibility for social justice 								
Community/Civic engagement								
<ul style="list-style-type: none"> Demonstrate social and civic knowledge [regarding social, political, economic, and historical issues]. Understand organizations and histories underlying government in global context Apply knowledge and analyze social, political, economic, and historical issues. Show ability to contribute actively by applying knowledge to the identification and analysis of societal and professional problems to enact solutions. 								
			Arch 2321 (LAP-AAS); BS/SS (AAS, BTECH)	HISTORY				
Global/ Multicultural Orientation								
<ul style="list-style-type: none"> Demonstrate expanded cultural and global awareness and sensitivity. Discern multiple perspectives. (feeling of the group that this is redundant... remove bullet) Use awareness of cultural differences to bridge cultural and linguistic barriers. (feeling of the group that this is redundant ...remove bullet) Demonstrate proficiencies and capacities in dealing with a diverse society. Communicate across cultural and linguistic barriers. (does this belong in skills ?) 								
Thinking valued highly in this field or profession								
Creativity			Arch 2321 (LAP-AAS); BS/SS (AAS, BTECH); COMM (AAS, BTECH)	ALL	3611, 3550, 3591, 4709, 3290			
Clarity			"	"	"			
Logic			"	"	"			
Problem solving			"	"	"			
Trouble-shooting			"	"	"			
Analytical skill			"	"	"			
Adaptability			"	"	"			
Intellectual curiosity			"	"	"			

	R' and U's R=required U= Useful	Gen Ed courses	Introduce in Gen Ed course; reinforce in the major.	Required courses /labs in the major	Electives in the major/related fields	Internship or clinical experience	Co-curricular or extra- curricular activities	Not sure
Aesthetic discrimination and appreciation			"	"	"			
*Design			"	"	"			
Interdisciplinarity			"	"	"			
Originality			"	"	"			
Detail-oriented			"	"	"			
Critical judgment based on precedents			"	"	"			
Decision-making								
Intellectual integrity (be thorough, don't cut corners, cite sources) practices)			Arch 2321 (LAP-AAS);	"	"			
Environmental stewardship.			"	"	"			
Show respect for intellectual property			"	"	"			
Avoid stereotypes	1		"	"	"			
Ethical business conduct (e.g., respect for contractual obligations; reject discriminatory hiring)			"	"	"			
Professional ethics	1		"	"	"			

1 ENT has adopted the Wikipedia definition : "Design is the planning that lays the basis for the making of every object or system. It can be used both as a [noun](#) and as a [verb](#) and, in a broader way, it means [applied arts](#) and [engineering](#) (See [design disciplines](#) below). As a verb, "to design" refers to the process of originating and [developing a plan](#) for a product, structure, system, or component with intention^[1]. As a noun, "a design" is used for either the final (solution) [plan](#) (e.g. proposal, drawing, model, description) or the result of implementing that plan in the form of the final product of a design process^[2]. This classification aside, in its broadest sense no other limitations exist and the final product can be anything from [clothing](#) to [graphical user interfaces](#) to [skyscrapers](#). Even [virtual](#) concepts such as [corporate identity](#) and cultural traditions such as celebration of certain holidays^[3] are sometimes designed. More recently, processes (in general) have also been treated as products of design, giving new meaning to the term *process design*."

2 Design Definition for ETET (ABET definition that we adhere to): "Engineering design is the process of devising a system, component, or process to meet desired needs. It is a decision-making process (often iterative), in which the basic science and mathematics and engineering sciences are applied to convert resources optimally to meet a stated objective. Among the fundamental elements of the design process are the establishment of objectives and criteria, synthesis, analysis, construction, testing and evaluation. The engineering design component of a curriculum must include most of the following features: development of student creativity, use of open-ended problems, development and use of modern design theory and methodology, formulation of design problem statements and specification, consideration of alternative solutions, feasibility considerations, production processes, concurrent engineering design, and detailed system description. Further it is essential to include a variety of realistic constraints, such as economic factors, safety, reliability, aesthetics, ethics and social impact." Elsewhere in the ABET criteria for accreditation, they stress the use of teams in solving problems and performing designs.

3 * **Design Definition for HM** (*modified version of CST's*) *Ability to create and implement multiple alternative solutions based on best practices, and to monitor, evaluate and modify them as needed.*

May 2011