

MYP Grade Overview: Design Technology UWC Thailand 22/23

All units taught in grades 6 to 10 are **continuously** being developed and improved to best meet the needs of the students at UWCT. Therefore, the following overview is only a reflection of current plans for the course. Some changes to these course overviews may occur as a result of planning done throughout the academic year.

Gr	Unit Number and Title	Key and Related Concepts	Global Context	Statement of Inquiry	Inquiry Questions	Approaches To learning skills taught / learnt / developed in this unit	Content (topics / knowledge/ subject specific skills)	Summative Assessment and MYP Criteria Assessed
6	<u>UWCThailand Locker Improvement project.</u> Through this students will develop a working knowledge of the design cycle and the design process. By designing a way to make their locker more useful, they gain knowledge of tools, materials, UCD, etc. This is an intro unit for students as this is their first official Design class.	KC: Creativity & Perspective RC: Collaboration	Scientific and Technical Innovation Fairness and Development	The process of innovation is collaborative and communicative in nature and requires proper planning and should incorporate the idea of design thinking.	Factual: What is the volume of your locker? Conceptual: How useful is your locker? What are the steps of the Design Cycle? Debatable: Should all products should be made with only non harmful materials?	Communication Research	Design Skill Focus: Basics of the Design Cycle Practicing Empathy and Understanding to a Target Audience. UCD User Centered Design Interior Design Basics (Color, layout, Feng Shui) Hands-on Skill Focus: Making Prototypes & Scale models, Tool skills needed include exacto knife use, measuring, marking, crafting, sawing and using cordless drills and glues. Digital Skills: Introduction to Shapr3D Google Slides How to annotate PDF's with Preview	Summative Assessment Student Friendly Design Cycle Multi-View drawing of locker Product Presentation Room Design Criteria Assessed: Ai,Aii,Aiii,Aiv Bi,Aii,Aiii,Aiv Ci,Cii,Ciii,Civ Di,Dii,Diii,Div Assessment Criteria: A, B, C, D
	<u>Automata design and build</u>	KC: Creativity, Materials and mechanisms RC: Service	Community Service and conservation	How do different mechanisms make things move? How can you make a toy that communicates a message?	Factual: Mechanisms are simple machines that transform one motion into a different motion Conceptual: How do different materials and mechanisms affect the efficiency of a machine? Debatable: There is a "best" way to achieve a certain movement / function of a machine (or toy)?	Thinking: Creativity, brainstorming Communicating: Learning to communicate VISUAL ideas clearly in drawings and diagrams Self-management Developing and organizing the steps to make the automata	Design Skill Focus: Basics of the Design Cycle Practicing Empathy to meet service partner needs. Prototyping and iterating Developing processes and organizing materials Hands-on Skill Focus: Using tools to create the parts of their design. Creating multi-view drawings of their idea Digital Skills: Introduction to Shapr3D Introduction to a Gantt Chart	
6	<u>Tool Safety video production</u> This unit has a two-fold focus. As it serves as the launch pad for documentarary skills the students will need for the G6 IDU later. It is also to try raise their awareness of safety and personal responsibility in Design class. Their task is to document the safe use of different power tools in a ≤3min video.	KC: Safety & Communication RC: Creativity & Perspective	Safety Different Cultural tolerances of risk	How can you effectively understand and teach safe tool use	Factual: Different tools have different uses and associated risks Conceptual: How do I determine the most important aspects of safe tool use and communicate them through an instructional video? Debatable: What considerations do I make when choosing to use tools safely	Social	Design Skill Focus: Interviewing techniques Practicing Empathy Towards a Community Digital Storytelling Elements Technology Skill Focus Digital Camera Usage How to use a Tripod and accessories Sound Capturing Techniques Natural vs Artifical Light and its impacts on Film Digital Skill Focus Edting movies using imovie	Summative Assessment: Short Film Ai,Aii,Aiii,Aiv Bi,Aii,Aiii,Aiv Ci,Cii,Ciii,Civ Di,Dii,Diii,Div Assessment Criteria: A,B,C,D
6	<u>IDU Documentaries</u>							

--	--	--	--	--	--	--	--	--

Gr	Unit Number and Title	Key and Related Concepts	Global Context	Statement of Inquiry	Inquiry Questions	Approaches To learning skills taught / learnt / developed in this unit	Content (topics / knowledge/ subject specific skills)	Summative Assessment and MYP Criteria Assessed
7	<u>Personal Expression Through Design:</u> Designing solutions through personal expression. Students will work through all stages of the Design Cycle with a focus on creating a podcast series, video log, or other blog-style platforms, that expresses something about themselves or their place in the world around them.	KC: Form RC: Perspective	Identities and Relationships	To create in a way that communicates a message or shares a perspective you must first know your own story.	Factual What do you value? Factual Who do you value? Conceptual How can you express your interests while creating a product? Debatable How should content creators consider the impact of their messages?	Self-management III. Organization skills Managing time and tasks effectively Plan short- and long-term assignments; meet deadlines Bring necessary equipment and supplies to class Select and use technology effectively and productively IV. Affective skills Managing state of mind Mindfulness Practise strategies to develop mental focus Practise strategies to overcome distractions Resilience Practise "bouncing back" after adversity, mistakes and failures Practise dealing with change V. Reflection skills (Re-)considering the process of learning; choosing and using ATL skills Consider content What did I learn about today? What don't I yet understand? What questions do I have now?	Design Focus Planning both short term and long term goals. Iterations based on Feedback Hands-on Skills Photography Videography Storyboarding Digital Skills Editing with software Storyboarding	Summative Assessment: Creation of a Podcast, VLog, or other blog style communication. As well as a design write-up Criteria Assessed: Ai,Aii,Aiii,Aiv Bi,Aii,Aiii,Aiv Ci,Cii,Ciii,Civ Di,Dii,Diii,Div
7	<u>Culinary Experience:</u> Students will take part in a culinary experience. This experience may differ from year to year in terms of the food prepared, but the focus is always the same. Using local ingredients to make "Fusion" Style food that promotes less waste and can be fully consumed.	KC: Aesthetics Culture RC: Collaboration Market Trends Sustainability	Personal and cultural expression Globalization	Food exists as a communicative and cultural unique commodity that impacts the environment more than we consider. .	Factual What is the global food chain? Factual Where does our food come from? Conceptual How does food waste impact global climate change? Debatable Should food be a commodity?	Thinking IX. Creative thinking skills Generating novel ideas and considering new perspectives Create novel solutions to authentic problems	Design Focus Systems Thinking Iterations based on Feedback Testing Methods Hands-on Skills Cooking Digital Skills Recipie Creation Slide Show	Summative Assessment: Design write-up Original Food Design Mapping of Ingredients sourcing Criteria Assessed: Ai,Aii,Aiii,Aiv Bi,Aii,Aiii,Aiv Ci,Cii,Ciii,Civ Di,Dii,Diii,Div
7	<u>Digital Worlds:</u> Using a virtual space as a tool to create a unique digital world linked to a creative writing element in Language.	KC: Communication Development RC: Form	Scientific and Technical Innovation	Conveying a message in a digital format is a unique experience that is dependent on form and technical advancements.	Factual What is VR? Conceptual What are the challenges of user-technology interaction when creating VR? Debatable Should VR be more widely used in education?	Communication I. Communication skills Exchanging thoughts, messages and information effectively through interaction Participate in, and contribute to, digital social media networks Reading, writing and using language to gather and communicate information Write for different purposes	Design Focus Systems Thinking Iterations based on Feedback Testing Methods Hands-on Skills N/A Digital Skills 3D Scene Management Coding and Logical Sequencing STL Model Manipulation	Summative Assessment: Creation of a VR/digital world in Cospaces that is based on a literary theme. Criteria Assessed: Ai,Aii,Aiii,Aiv Bi,Aii,Aiii,Aiv Ci,Cii,Ciii,Civ Di,Dii,Diii,Div

7	Cardboard Boat Races: Students will be using their design thinking skills to create boat designs of non-resistant material (Cardboard). The focus is on understanding how materials can be manipulated to meet various needs.	KC: Creativity RC: Adaptability Function	Scientific and Technical Innovation	Products are material dependent, when for environment conditions designers can employ material manipulation strategies.	Factual What is a resistant material? Conceptual How can resistant materials be manipulated? Debatable Should designers consider the end of life conditions when deciding what materials to use?	Thinking VIII. Critical thinking skills Analysing and evaluating issues and ideas Practise observing carefully in order to recognise problems Draw reasonable conclusions and generalizations Evaluate and manage risk Troubleshoot systems and applications IX. Creative thinking skills Generating novel ideas and considering new perspectives Make guesses, ask "what if" questions and generate testable hypotheses X. Transfer skills Utilizing skills and knowledge in multiple contexts Combine knowledge, understanding and skills to create products or solutions	Design Focus Material testing Iteration testing Data Synthesis Hands-on Skills Non-resistant material manipulation (Cardboard) Digital Skills N/A	Summative Assessment: Creation of a functional boat that will be floated on a local lake and compete in a race. Criteria Assessed: Ai,Aii,Aiii,Aiv Bi,Aii,Aiii,Aiv Ci,Cii,Ciii,Civ Di,Dii,Diii,Div
----------	---	--	-------------------------------------	---	--	--	---	--

Gr	Unit Number and Title	Key and Related Concepts	Global Context	Statement of Inquiry	Inquiry Questions	Approaches To learning skills taught / learnt / developed in this unit	Content (topics / knowledge/ subject specific skills)	Summative Assessment and MYP Criteria Assessed
8	UWCT TV: Students will use the design cycle to create a series of TV episodes in the "variety show" style to convey a message about the school community and the larger community of Phuket and Thailand.	KC: Communities Culture Global Interactions RC: Collaboration	Personal and Cultural Expression	In a global community cultural understandings can transcend traditional norms, understanding these norms can be the key to collaboration.	Factual What is Culture? Conceptual How does culture impact our community? Debatable Is culture the single most determining factor in the success of a community?	Communication I. Communication skills Exchanging thoughts, messages and information effectively through interaction Use intercultural understanding to interpret communication Interpret and use effectively modes of non-verbal communication Reading, writing and using language to gather and communicate information Write for different purposes Use a variety of organizers for academic writing tasks Structure information in summaries, essays and reports	Design Focus Planning both short term and long term goals. Iterations based on Feedback Hands-on Skills Photography Videography Storyboarding Set Creation Digital Skills Editing with software Storyboarding	Summative Assessment: Creation of a TV Show that follows the variety show format and delves into the cultural interactions at UWCT Criteria Assessed: Ai,Aii,Aiii,Aiv Bi,Aii,Aiii,Aiv Ci,Cii,Ciii,Civ Di,Dii,Diii,Div
8	Bush Craft and Shelter Building: Collaboration with Outdoor Education and English Literature. Looking at the Concepts from Lord of the Flies and applying them to the creation of shelters in adverse environments.	KC: Systems RC: Collaboration Function	Fairness and Development	Adversity can drive innovation, designers must consider the systems associated with adverse conditions solve problems.	Factual What is a shelter? Conceptual What materials can be used to create shelters? Debatable Human instinct to survive trumps knowledge?	Self-management III. Organization skills Managing time and tasks effectively Set goals that are challenging and realistic Keep an organized and logical system of information files/notebooks Use appropriate strategies for organizing complex information IV. Affective skills Managing state of mind Perseverance Demonstrate persistence and perseverance Practise delaying gratification Resilience Practise "bouncing back" after adversity, mistakes and failures Practise "failing well" Practise dealing with disappointment and unmet expectations Practise dealing with change	Design Focus Planning both short term and long term goals. Design for Safety Climate limitations to Design Hands-on Skills Sawing Uneven logs Lashing and Joining Techniques Limited Material Construction Digital Skills 3D Design	Summative Assessment: Students will create an outdoor shelter that can withstand inclement weather conditions. Criteria Assessed: Ai,Aii,Aiii,Aiv Bi,Aii,Aiii,Aiv Ci,Cii,Ciii,Civ Di,Dii,Diii,Div
8	Games for Change: Create a board game with a socially conscious theme that can be played by others.	KC: sustainability	Fairness and development	Understanding how social change happens requires an in-depth focus on perspectives and relationships.	Factual What are the features of a board game? Conceptual How do we on-board users? Debatable How can board Games create social change?	Social II. Collaboration skills Working effectively with others Practise empathy Manage and resolve conflict and work collaboratively in teams Listen actively to other perspectives and ideas Exercise leadership and take on a variety of roles within groups Advocate for one's own rights and needs	Design Focus Planning both short term and long term goals. Design for wide range of users UCD-Personas CAD Graphic Creation and Manipulation Hands-on Skills Cardboard finishing techniques Artwork Digital Skills 3D Design and 3D printing Shapr3D	Summative Assessment: Students will create a complete board game with rules, pieces and a box that has a focus on a social problem or dilemma of their choosing. Criteria Assessed: Ai,Aii,Aiii,Aiv Bi,Aii,Aiii,Aiv Ci,Cii,Ciii,Civ Di,Dii,Diii,Div

8	Photo Journalism: Photograph a subject of your choice over a period of time and apply the techniques of exposure theory and composition to the creation of an original photo essay and exhibition.	KC: 2 dimensional design, gestalt theory Aesthetics RC: digital trends in media	Personal Expression, Visual representations of global concerns	Visual representations of complex subjects can expressively and accurately develop persuasive arguments and inspire action for the betterment of the world.	Factual What are the design principles that drive composition theory? Conceptual How can we apply creative agency to the established rules of exposure theory in our photos? Debatable Are images more effective than text or speech in conveying information?	III. Organization skills Managing time and tasks effectively Set goals that are challenging and realistic Keep an organized and logical system of information files/notebooks Use appropriate strategies for organizing complex information IV. Affective skills Managing state of mind Perseverance Demonstrate persistence and perseverance Practice delaying gratification	Design Focus Planning both short term and long term goals. Iterations based on Feedback Hands-on Skills Photography Graphic design Desktop publishing Digital Skills Editing with software Control of camera aperture, shutter and ISO	Summative Assessment: Creation of a photo essay that attempts to raise awareness in the public eye regarding a significant issue facing Phuket residents. Criteria Assessed: Ai,Aii,Aiii,Aiv Bi,Aii,Aiii,Aiv Ci,Cii,Ciii,Civ Di,Dii,Diii,Div
----------	--	---	---	---	--	--	--	--

Gr	Unit Number and Title	Key and Related Concepts	Global Context	Statement of Inquiry	Inquiry Questions	Approaches To learning skills taught / learnt / developed in this unit	Content (topics / knowledge/ subject specific skills)	Summative Assessment and MYP Criteria Assessed
9	Design Development and the SDG's: This unit is hyperfocused on solutions surrounding the SDG's. Students will have free choice in terms of which SDG they will deep dive on.	KC: Global Interactions RC: Innovation, Invention, Perspective, Sustainability	Globalization and Sustainability	Global Interactions are dependent on individual perspective and collective agreement and they drive human impact on the environment.	Factual: What are the SDG's Conceptual: How are human's impacting the environment? How do we apply systems thinking to our research? Debatable: How does your selected SDG impact your local community? Should all businesses be held to a global standard of ethics and sustainability practices?	Research VII. Media literacy skills Interacting with media to use and create ideas and information Locate, organize, analyse, evaluate, synthesise and ethically use information from a variety of sources and media (including digital social media and online networks) Demonstrate awareness of media interpretations of events and ideas (including digital social media) Seek a range of perspectives from multiple and varied sources Communicate information and ideas effectively to multiple audiences using a variety of media and formats Compare, contrast and draw connections among (multi)media resources	Design Skill Focus: Systems Thinking Hands-on Skill Focus: Modelling Digital Skills: Media Creation Adobe Illustrator	Summative Assessment Students choose to create one of the following: Eco friendly Building or Structure Design A New Club or Group that Can Make a difference to an issue connected to an SDG A proposal for a local or campus initiative Design a New Social Media Platform that uses the SDG's in some way. Criteria Assessed: Ai,Aii,Aiii,Aiv Bi,Aii,Aiii,Aiv Ci,Cii,Ciii,Civ Di,Dii,Diii,Div
9	Rube Goldberg Interactive Spaces: This unit is focused on technical skills and the introduction of chain reaction machines using circuits and simple mechanics. The extra challenge here is that the students must design their space in a way that makes it interactive with the users as well as designing in a loop so that the machine resets after each use for the next user.	KC: Aesthetics Communication	Personal and Cultural Expression	Visual aesthetics can drive functionality and user experience	Factual: What is a chain reaction machine? What is a 3D plane? Conceptual: What are the simple machines that can be incorporated into chain reaction machines? How does an Arduino, electromagnet or basic circuit work? Debatable: Can art be functional?	Communication I. Communication skills Exchanging thoughts, messages and information effectively through interaction Use intercultural understanding to interpret communication Use a variety of speaking techniques to communicate with a variety of audiences Negotiate ideas and knowledge with peers and teachers	Design Skill Focus: Planning and Diagramming Understanding 3D planes Using Gravity to create motion Using Simple Circuit Hands-on Skill Focus: Modelling Making a chain reaction machine Cutting wood Gluing Fastening Digital Skills: Arduino Basics Or Circuits	Summative Assessment Creating a Chain Reaction Machine that meets some specific requirements. Criteria Assessed: Ai,Aii,Aiii,Aiv Bi,Aii,Aiii,Aiv Ci,Cii,Ciii,Civ Di,Dii,Diii,Div

9	Free Choice Project: The final project in Grade 9 will consist of students taking on a UCD (User Centered Design) challenge. Each student must choose their user/group and conduct usability tests and interviews to create a final solution that works for them	KC: Communication Connections RC: Form Function	Identities and relationships Attitudes Identity formation	Making connections with others is the best way to understand their unique perspective, attitudes and motivations.	Factual How do I choose a person to focus on? Conceptual How do I get my selected user to give me information? Debatable How much of themselves should designers put into products when making things for others?	Social II. Collaboration skills Working effectively with others Practise empathy Listen actively to other perspectives and ideas Give and receive meaningful feedback	Design Skill Focus: UCD User-Centered Design Interviews Problem statements Brief Creation Hands-on Skill Focus: Varies depending on student solution Digital Skills: Varies depending on student solution	Summative Assessment: Creation of a user-centered product that will be present in a final form. Criteria Assessed: Ai,Aii,Aiii,Aiv Bi,Aii,Aiii,Aiv Ci,Cii,Ciii,Civ Di,Dii,Diii,Div
---	---	--	---	---	---	--	--	--

Gr	Unit Number and Title	Key and Related Concepts	Global Context	Statement of Inquiry	Inquiry Questions	Approaches To learning skills taught / learnt / developed in this unit	Content (topics / knowledge/ subject specific skills)	Summative Assessment and MYP Criteria Assessed
10	UWCT Production Simulation- The goal of this unit is to provide a structured approach to product development and presenting a concept to the general public. Though there is a set of 4-specific paths in this unit all of the paths require the successful presentation of the final design to the public.	KC: Connections Creativity RC: Innovation	Globalization and Sustainability	<i>Connecting our perspective and experiences to our creative attributes makes for innovative products.</i>	Factual What is a Target Audience? Conceptual What is UCD? Debatable Who should be driving the process of innovation when employing UCD strategies? The TA? Or the Designer?	Self-management III. Organization skills Managing time and tasks effectively Plan short- and long-term assignments; meet deadlines Set goals that are challenging and realistic Keep an organized and logical system of information files/notebooks IV. Affective skills Managing state of mind Mindfulness Practise focus and concentration Practise strategies to develop mental focus Practise strategies to overcome distractions Practise being aware of body–mind connections Resilience Practise “bouncing back” after adversity, mistakes and failures Practise “failing well” Practise dealing with disappointment and unmet expectations Practise dealing with change	Design Skill Focus: UCD User-Centered Design Interviews Problem statements Logical Ideation Based on User Group Persona Hands-on Skill Focus: Carpentry work Sign and Theme Creation Product Development Digital Skills: Varies depending on student solution	Summative Assessment Creation of a Product to sell and development of a booth/stand to sell the product at. Criteria Assessed: Ai,Aii,Aiii,Aiv Bi,Aii,Aiii,Aiv Ci,Cii,Ciii,Civ Di,Dii,Diii,Div
10	“Fix-It”: Students are meant to learn that not all things need to be thrown away. And that broken is a state of being that can change with the proper research, application and motivation.	KC: Communities Logic RC: Collaboration	Personal and Cultural Expression Fairness and Development	<i>Communities need logical solutions to combat overconsumption and waste in our world.</i>	Factual What discarded products can you find on Campus? Conceptual What is the best way to fix something that is broken? Debatable Should we fix broken items or simply purchase new ones?	Thinking VIII. Critical thinking skills Analysing and evaluating issues and ideas Identify obstacles and challenges IX. Creative thinking skills Generating novel ideas and considering new perspectives Apply existing knowledge to generate new ideas, products or processes X. Transfer skills Utilizing skills and knowledge in multiple contexts Make connections between subject groups and disciplines	Design Skill Focus: UCD User-Centered Design Problem Solving - Trouble Shooting Hands-on Skill Focus: Carpentry work Sign and Theme Creation Product Development Restorative Principles Digital Skills: Varies depending on student solution	Summative Assessment Students are responsible for keeping logical plans and keeping track of the items they fix. Criteria Assessed: Ai,Aii,Aiii,Aiv Bi,Aii,Aiii,Aiv Ci,Cii,Ciii,Civ Di,Dii,Diii,Div

10	Final Design Project (DP IA Intro) - This unit is meant to be the bridge to DP Design. As well as a good summative to learn how far they students have come through the MYP years.	KC: Development RC: Form and Function	Scientific and Technical Innovation	<i>Development of a person, concept, product or system requires a balance between form and function.</i>	Factual What is Form? Conceptual How does the form that a product takes impact its development? Debatable Which is more vital to a design? Form or function?	Research VI. Information literacy skills Finding, interpreting, judging and creating information Collect and analyse data to identify solutions and make informed decisions Evaluate and select information sources and digital tools based on their appropriateness to specific tasks VII. Media literacy skills Interacting with media to use and create ideas and information Communicate information and ideas effectively to multiple audiences using a variety of media and formats	Design Skill Focus: UCD User-Centered Design Interviews Problem statements Logical Ideation Based on User Group Persona Hands-on Skill Focus: Product Development Rapid Prototyping Digital Skills: Word Processing CAD Design	Summative Assessment Final Paper of the Design process with all required elements. Criteria Assessed: Ai,Aii,Aiii,Aiv Bi,Aii,Aiii,Aiv Ci,Cii,Ciii,Civ Di,Dii,Diii,Div
----	---	--	-------------------------------------	--	--	---	---	---