

Title	Activity
<p>What issues do we face in education?</p>	<ul style="list-style-type: none"> • Why do I need to know this? • When will I ever use this? • How is this relevant? <p>Present education leaves many students not engaged in learning and finding it difficult to manage the complexities of life relating to the interface of society, schools and business.</p>
<p>Needs: Read: <i>Wagner, Tony; Dintersmith, Ted (2015-08-18). Most Likely to Succeed: Preparing Our Kids for the Innovation Era</i></p>	<p>The skills needed in our vastly complicated world, whether to earn a decent living or to be an active and informed citizen, are radically different from those required historically. Quite simply, the world has changed, and our schools remain stuck in time. “Knowledge workers” have become obsolete. What the world demands today are “smart creatives,” the term that Eric Schmidt and Jonathan Rosenberg use to describe the kind of people Google needs to hire in their book How Google Works.. ... <i>Wagner, Tony; Dintersmith, Ted (2015-08-18). Most Likely to Succeed: Preparing Our Kids for the Innovation Era</i></p>
<p>School</p>	<p>Our after-school program will provide a fun environment around interdisciplinary project based learning for charter schools, public high schools, home schools and drop outs.</p> <p>We will provide the missing skills like problem solving, creative and critical thinking, questioning, meta-cognition reflection, character development, business processing, financial literacy and societal values needed to succeed in today’s environment.</p>
<p>Mission:</p> <p>The mission of The Project Academy After-School is to advance the development in spirit and mind of boys and girls drawn from diverse cultural and social backgrounds and to inspire in them a commitment to the best self in the community, education and business world.</p> <p>The goal of the school’s program is the formation of skilled and discerning minds in preparation for higher education, careers and lifelong learning. They will understand that problems are opportunities. “The bigger the problem, the bigger the opportunity” (<i>Vinod Khosla</i>). Through its learning and collaboration, Project Academy also educates its students</p>	

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<p>for service in the community and in today's global civilization.</p> <p>Values:</p> <p>The school will foster a community based culture of a learning environment, use of visual thinking process with all treated as adults and with respect. A school vest will be worn to signify connection to each other. Key words are: Empathy, Curiosity, Innovation, Persisting, Flexibility, Continuous learning, Humor and Taking responsible risk.</p>	
<p>Facilitators</p>	<p>The following team will support the groups learning during the 16 weeks:</p> <ul style="list-style-type: none"> • Bill Wolfson BSEE, MA in Physic • ???
<p>Description</p>	<p>The school will focus on the following skills with learning happening using project based activities in a collaborate environment:</p> <ul style="list-style-type: none"> • Problems solving • Collaboration • Innovation • Thinking skills (critical and creative thinking, questioning, reflection) • Character development • Assessment and feedback for learning • Financial literacy and business skills • Quality processing and measurements • Assessment and feedback learning • Brain plasticity
<p>LEARNING OUTCOMES / OBJECTIVES</p> <p>How are we going to integrate character development?</p>	<p>What are the learning outcomes:</p> <p>By the end of this course, the students will be able to:</p> <ul style="list-style-type: none"> • Clearly articulate the nature of the design process & problem solving • See the World as a place of excitement and inspiration • Use assessment strategy and feedback as learning tools • Use of relevant soft-skills in their life to better interface with society • Begin the steps to become a lifelong learner • Understand the processes within a business and

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	personnel finance <ul style="list-style-type: none"> Understand that problems are opportunities in life 										
Student's Responsibility: <i>Keeping a journal during the course:</i> <ul style="list-style-type: none"> Take notes Questions to ask/ideas and reflections 	<ul style="list-style-type: none"> If at any time you start to feel lost or behind in the course, don't panic or keep silent--- let us know so we can help. Please let us know if we need to make adjustments to our communication style. Are we going too fast? Too slow? Are we being too techie? 										
Student activity	<ul style="list-style-type: none"> We will support the students to buy and wear vests with the school logo Certain students will be given the opportunity to support other students in the learning process. These will be master designers. Students are viewed as active authors of their own development 										
Weekly Schedule:	16 weeks; 4 days/week; 2 hours/day 8 hours /week (possible weekends extra 4hrs)										
Implementation: Areas of discussion ...can be tailored to local needs such as the local community food needs.	The course will be done with hands on learning using methods from WPI/engineeringlens.org <table border="1" data-bbox="662 1119 1451 1623"> <tr><td>● Feed the World</td></tr> <tr><td>● Heal the World</td></tr> <tr><td>● Clean the World</td></tr> <tr><td>● Power the World</td></tr> <tr><td>● Respect the World</td></tr> <tr><td>● Connect the World</td></tr> <tr><td>● Entertain the World</td></tr> <tr><td>● Sports of the World</td></tr> <tr><td>● Music of the World</td></tr> <tr><td>● Record the World</td></tr> </table>	● Feed the World	● Heal the World	● Clean the World	● Power the World	● Respect the World	● Connect the World	● Entertain the World	● Sports of the World	● Music of the World	● Record the World
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<table border="1" data-bbox="120 1192 581 1535"> <tr><td rowspan="10" style="text-align: center; vertical-align: middle;">↑ ↓</td><td>See the problem/Bug</td></tr> <tr><td>Frame it</td></tr> <tr><td>Research</td></tr> <tr><td>List possible solutions</td></tr> <tr><td>Pick a few</td></tr> <tr><td>Select</td></tr> <tr><td>Test</td></tr> <tr><td>Reflection</td></tr> <tr><td>Present solution</td></tr> </table> <p>Other possible problems that could be worked on are the Grand Challenge for engineering determined by the National Academy of Engineering.</p>	↑ ↓	See the problem/Bug	Frame it	Research	List possible solutions	Pick a few	Select	Test	Reflection	Present solution	Assessment (learning targets) will be by skill level with students and community giving the feedback. Badges as translators of competency
↑ ↓		See the problem/Bug									
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	Course Rubrics Three areas of learning targets										

Title	Activity		
<ul style="list-style-type: none"> Knowledge ... Content Minimal Skills ... Processes Reasoning ... Thinking skills, character development 	Create skills targets (badges) like:		
	Problem solving	Character	Entrepreneurship
	Innovation	Community	Values
	Collaboration	Attention to detail	
Course Expectations team assignments and discussion board postings.	Candidates are expected to participate in discussion forums and complete the assigned projects on time. Students are responsible for making arrangements with the instructor when difficulties arise in completing an assignment on time.		
What Is a Design-centric culture?	Empathy, Whose the customer, something good for society		
Pick two soft-skills Each week;	Students will blog about two soft-skills to the other students		
Week1 Integrate 2 habits/week	<ul style="list-style-type: none"> Introduction/ Course objectives Discussion web tools; problem solving Process Brain plasticity 		
Week 2	<ul style="list-style-type: none"> Collaboration 6 hats Engr. Is everywhere Values, Group culture 		
Week 3 ... Forming a team Learning targets	<ul style="list-style-type: none"> Selecting a problem, Team rules Creating target learning goals Character Development Roles of team members 		
	Which problem will we work on? (Example) "Feed the World"... Focus on our local community Develop the Requirements for what we want to do What 5 or so items should we judge the success of a possible solution		
Week 4 (see example)	<ul style="list-style-type: none"> Re-visit the project selection ... Make a list of items of possible items to work on Project plan Project Framing Quality system design... The agenda... Mike Hammer 		
Week 5	Outline of tasks; gnat chart		

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	Do we need business partners, community involvement
Week 6	Project... Activities Financial literacy, Balanced Scorecard
Week 7	Quality process design
Week 8	Research, reach out to the community (organizations)
Week 9	
Week 10	Mid-review presentation
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	Celebration; Presentation; family invitation & community
Week 16 Reflection of project Time capsule for next team What content skills did we learn?	<ul style="list-style-type: none"> • Assessment • Creativity ... Making things better • Learning targets assessment • Reflection • How were the roles of team members performed?
Mentor support option:	A team of mentors from different Business and organizations will be available to support the student. A mentor fair will occur where mentors present themselves to the students. The student will have to opportunity to pick someone they would like to get support from. These mentors will be trained in our program and how they could support a student.

Working together



Need to set up the following:

- Web based tool for communication and information sharing
- Financial system
- Organization

Reference Material:

Reference Sites:

<http://education.illinois.edu/ups/>

<http://www.naeyc.org/>

http://www.liberty.k12.ga.us/jwalts/reciprocal_teaching.htm

<http://www.engineeringlens.org>

Habit of Mind			
Persisting	5. Metacognition	9. Thinking and communicating with clarity and precision	13. Taking responsible risks
2. Managing impulsivity	6. Striving for accuracy	10. Gather data through all senses	14. Finding humor
3. Listening with understanding and empathy	7. Questioning and posing problems	11. Creating, imagining and innovating	15. Thinking interdependently
4. Thinking flexibly	8. Applying past knowledge to new situations	12. Responding with wonderment and awe	16. Remaining open to continuous learning

<http://www.habitsofmind.org/content/back-back-strategy-used-enhance-habits-mind>

<p>Form used after each class to assess learning and get feedback to modify next classes.</p>	<p>Feedback Sheets: DATE: _____</p>	
	<p>Important learning/changes participants will make to their learning process:</p>	<p>What participants liked about today's class:</p>
	<p>Things to add or change:</p>	<p>Still pondering:</p>

General Comments:		

Course Details:

Major area	Theme
Introduction / Creating a learning collaborative in the classroom / pre-Assessment of engineering knowledge and thinking skill awareness	Attributes, Values, Teacher Skills and the relation to excellence in academics and the larger world of work. Developing the outcome goals for the class.
Work in teams	Part of Team Project ...Collaboration, decision making, brain writing
Problem framing and solving Empathy	Part of Hands on Learning ... understanding what is the true problem and tinkering with ways to solve the problem
Creative and critical thinking skills around the design process	Learn the tools of brainstorming, brain-writing, and decision making for divergent and convergent processing skills
Brain Plasticity <ul style="list-style-type: none"> • Carol Dweck, Ph.D • Claude M. Steele Ph.D 	... we continuously are able to learn new things Two 30 minutes discussions a total of 60 minutes spent teaching not math but a single idea: that the brain is a muscle . Giving it a harder workout makes you smarter. That alone improved their math scores.
Habits of Mind	Built into projects and continuous discussion
Infusion of thinking skills	Create an appreciation for life-long learning by providing opportunities to develop creative and critical thinking skills
Dialogue	... 6 Hats How to create dialogue and not shouting matches. Using dialogue question
Professionalism	Respectful dealing with others
Entrepreneurships / Innovation	Business processes... Persistence, problems as opportunities, finding humor, accuracy in your work, remain open to continuous learning
Conclusions, Self-Assessment Quality focus	Understand why you did certain things, What can you learn from your actions to improve How can you use data to improve?
Community support <ul style="list-style-type: none"> • Job training • Internships • Technicians 	<ul style="list-style-type: none"> • Get a partnership with industry that provides career opportunity if we provide a person with good soft-skills. Retail stores, Warehouses, etc. • Relationship with non-profits that focus on this area.

Major area	Theme
<ul style="list-style-type: none"> • Apprenticeships • Mentors 	
<p>Example: Unit 4:</p> <p>Using question will be a key factor in doing a unit</p> <ul style="list-style-type: none"> • Re-visit the project selection • Project plan • Project Framing <p>Quality system design... The agenda... Mike Hammer</p>	<p>Assignment:</p> <ul style="list-style-type: none"> • Read the handout on Mike Hammer’s book. • Web search and learn about Project planning and Project Framing. What do they do and how are we to use them in doing the project? <p><u>Re-visit the project we selected</u> Any second thoughts? Could we break the project up into smaller parts?</p> <p><u>Project Framing</u> Was the Framing done well? Why is framing important?</p> <p><u>Quality System</u> How does a quality system fit into our project?</p>

while weaving prosocial interdisciplinary themes such as:

- Global Awareness – “Learning from and working collaboratively with individuals representing diverse cultures, religions and lifestyles in a spirit of mutual respect and open dialogue in personal, work and community contexts.”
- Collaborate with Others – “Exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal.” “Assume shared responsibility for collaborative work, and value the individual contributions made by each team member.”
- Media Literacy – “Examine how individuals interpret messages differently, how values and points of view are included or excluded, and how media can influence beliefs and behaviors.”
- Flexibility and Adaptability – “Deal positively with praise, setbacks and criticism.” “Understand, negotiate and balance diverse views and beliefs to reach workable solutions, particularly in multi-cultural environments.”
- Be Self-Directed Learners – “Demonstrate commitment to learning as a lifelong process.”
- Work Effectively With Diverse Teams – “Respect cultural differences and work effectively with people from a range of social and cultural backgrounds.”
- Productivity and Accountability – “Work positively and ethically.”
- Leadership and Responsibility – “Use interpersonal and problem-solving skills to influence and guide others toward a goal.” “Inspire others to reach their very best via example and selflessness.” “Demonstrate integrity and ethical behavior in using influence and power.”