



LEGO ROBOT PROJECT Concept Map



by

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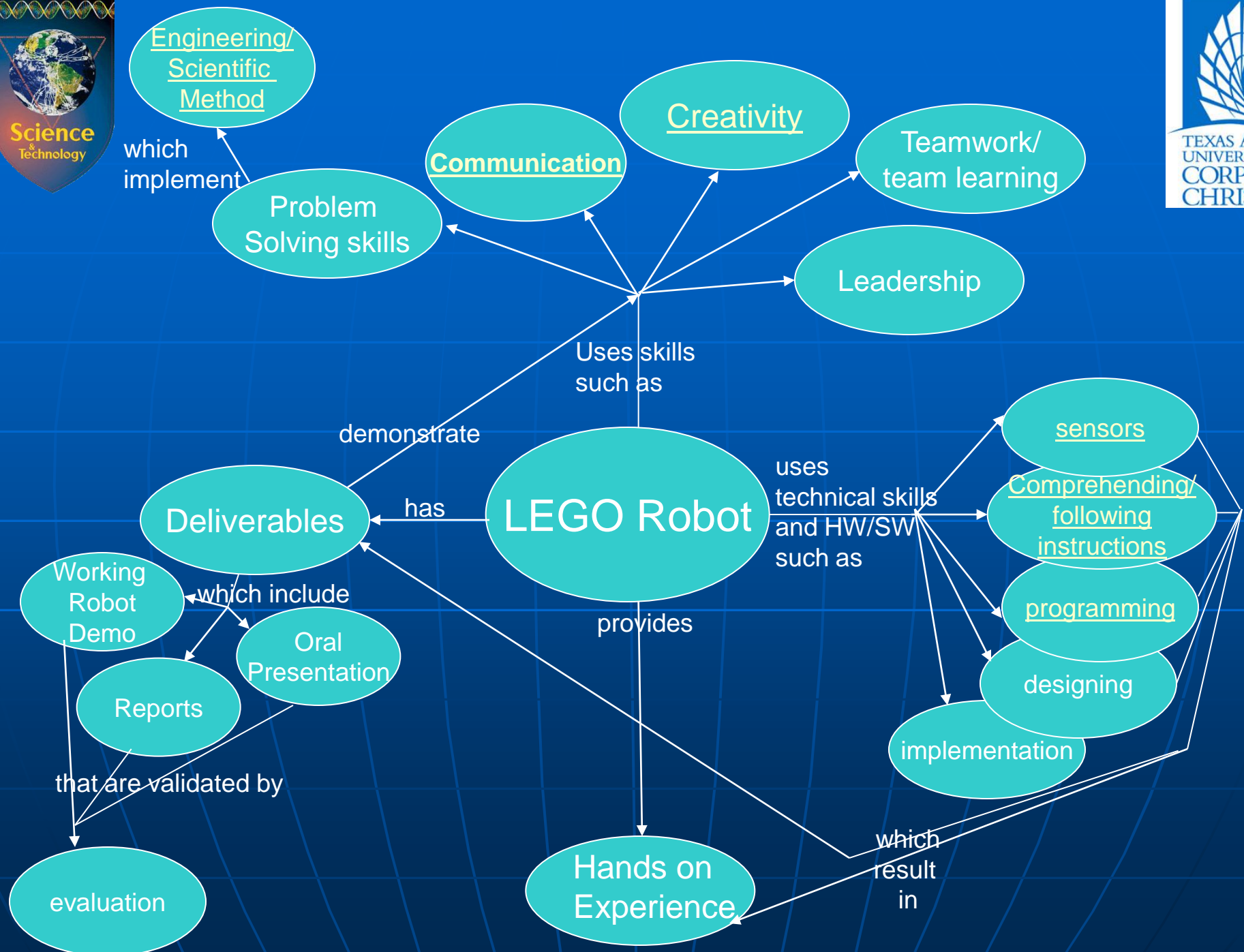
ENTC 1303 – Introduction to Engineering Technology

ENGR 1211 – Fundamentals of Engineering

Engineering Technology Program

Department of Computing Sciences

Texas A&M University-Corpus Christi





Engineering Problem Solving

- Recognize the problem
- Define the problem
- Brainstorm possible solutions
- Consider the consequences of each solution and pick the optimum one
- Implement the optimum solution
- Evaluate the results
- Repeat to improve, if necessary

Scientific Method of Problem Solving

- Hypothesis
- Perform Experiments
- Collect and analyze data
- Make conclusions
- Modify hypothesis and repeat if necessary





Demonstration of Effective Communication Skills



- Oral Presentation
- Written Report
- Understanding and Following Instructions
- Demonstration and defense of the final product (robot)



Use and Demonstration of Creativity in Engineering



- Creative problem solving
- Unique HW Design and implementation (robot)
- Unique SW Design and implementation (robot control program)
- Interesting and engaging presentations



SENSORS



Use

- Touch sensors
- Light sensors

Understand

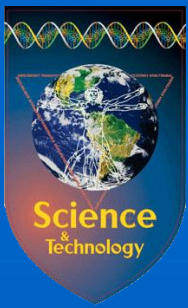
- Pressure sensors
- Temperature sensors
- Chemical sensors
- Machine vision
- Wind (draft)



Programming Concepts and Related Skills



- Understanding and using modular programming
- Designing the program to follow a required logic (flow chart)
- Programming Robotics Invention System Ver. 2.0 software tool



Comprehending/Following Instructions



- Understanding assignment
- Understanding deliverables
- Following the outlined procedure for creating the robot
- Following the appropriate procedure to write the motion control program
- Understanding and following instructions for proper report format and content
- Understanding and following instructions for proper oral presentation



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