Request for Curriculum Change
New Course Proposal

Date: 10/11/19

Department/Subject: **Industrial tech**

Person(s) initiating the request: **Irv Geary, Kelly Nicholls**

Department members involved in the development of the course proposal: **Irv Geary, Kelly Nicholls**

School(s): **Forest Lake High School**

Grade(s): **11-12**

Course Title: **Engineering Design**

Describe the process that led to this request for a new course:

Our department recognized the lack of a complete engineering capstone class that teaches students the engineering design process. This class will pull prior knowledge of manufacturing, CAD design, math and science together and allow students to integrate them through the engineering process moving from problem to prototype to solution.

We further recognized the underutilization of the new Design/Fab Lab that was created for this exact type of class. Students will utilize the lab for research and development as well as prototype construction, testing and presentation.

Specific Information to Accompany Request

Course Outline/Learner Outcomes
Complete a [Course Outline](#) for your proposed course and submit it with your proposal.

Budget Considerations
Check any of the following that will be needed for your proposed course and indicate the anticipated cost for each:

___ *Textbooks*
    NA,

___ *Digital Curriculum Resources*
    Curriculum is based off of the nationally recognized Engineering Design Loop/Process which is readily available for free.

___ *Other Curriculum Materials (consumables, supplies, ancillaries, etc.)*
    Materials: Prototype materials which will vary per team.
    Consumable: These are yearly consumables.
    Approximate total cost: $600-$800 per class

___ *Technology Devices/Equipment/Hardware*
    Devices/equipment needed: The existing Fab Lab is already created and is nearly ready for utilization. Biggest need would be computers for research and development as well as CAD/CAM ready for prototype design and construction. Need is 14-16 laptops with Solid Works+CAM software loaded. Best situation would be to create a portable laptop cart to be utilized within the department with other classes such as Machine Tool, Metals Fabrication and CAD.
    Approximate cost: $

___ *Staff Development*
    I have already been through and taught the PLTW Engineering Design and Development class as well as their Professional Development so no extra staff training is necessary.

Effects of the New Course Proposal

Provide a brief explanation for any of the following the new course proposal will affect:

___ Current curriculum:

This course will pull together the manufacturing classes with the CAD design classes for the missing capstone of Engineering Design in which students will have to go from problem to prototype to presening. This will be focused towards engineering bound students which will help integrate math and science students with the industrial tech department in a true STEM class.

___ Programs in other departments/grade levels:

    See above.

___ Credit requirements:

    .5

___ Prerequisite requirements:

    Intro to Metals, Intro to CAD, Engineer CAD 1

___ Staffing:

    Irv Geary

___ Space allocation:

    The Polaris Design Fab Lab

___ Master schedule:

    Offered on one block Spring Term

___ District Technology impact:

    Needed laptops with software.

___ Other:

Signatures

Signatures indicate agreement with the course proposal.

Kelly Nicholls

Jason Miller
Administrative Department Lead

John-Paul Jacobson
Forest Lake Area Middle School Principal

__Kelly Lafean_____
Forest Lake Area Community School Principal

Jim Caldwell
High School Principal

__Diane Giorgi_____
Director of Teaching and Learning