

# 2008.02.13 :: cnc independent study proposal and outline

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impetus :: Get the CNC machine out of the closet! The machine at present is surrounded by a whole list of obstacles that are hindering the students and professors from implementing this important tool into the curriculum at the CED, namely knowledge of how to use the tool correctly to provide the highest quality product in the safest environment possible – for the user and tool. The problems are complex and involve many parties, and to resolve them it will take education on all sides as to the proper use of the machine and the provisions which it requires for proper and consistent use. For example, the physical climate for the machine needs revision to address issues of dust, accessibility, visibility, and to provide a healthy climate with which the machine and operator may function, and also the machine needs to be accessible outside shop hours because cuts on this machine take many hours. The tool has and is increasingly becoming integrated into the curriculum irregardless of the status of this machine, and students should not have to outsource these services at great expense nor visiting faculty revise their curriculum as a function of this tool being inaccessible. no-one is to blame for the current status of the machine, [we do have it!] however, the call has been heard and the services offered to ameliorate the situation. The success of this project relies on the cooperation of many individuals and the administration at the CED, all of which to date have shown interest in pushing this project forward.

proposal :|: part one.

The goal with this investigation would be to properly calibrate the machine and software for the precise and accurate cutting and shaping of various materials and operations, that could be then be taught to the appropriate people to begin to incorporate the device into the curriculum here at the CED. This work will involve: technological research updating , acquiring, and installing new software which facilitate ease of use and accessibility to the department via the possibility of dovetailing with existing licensed software the CED operates, calibrating the machine to cut at the extremely low tolerances with the highest degree of precision it is capable of cutting [and in the various materials that may commonly be in use], revising the physical climate in which the machine functions for the safety and health of both the operator s and the machine, establishing new protocol for the use of the machine and editing the existing policies and procedures for the safe, proper, and consistent use and accessibility of the machine. The machine and bed specifically need attention. This work will require some level of funding in which case grant writing/ acquiescing of funds will be necessary to pay for parts, software, or materials necessary to achieve these goals. Part one will begin with researching the current climate surrounding the machine and unlocking any department contained knowledge about the use or history of the machine.

part two ::

Upon completion of part one, the machine will be ready and calibrated for consistent use and exploration. Part two of the project will involve the development of advanced cutting procedures and material exploration. This will include but is not limited to researching and contacting various material manufacturers in attempts to obtain free tooling-specific materials [and others] for this exploration, and will become available for the individual use of the thesis students involved in the exploration. various samples of tool settings and cutting techniques will be produced for reference and guidance to future operators.

part three ::

The third part of this independent study will be to format and hold a short training seminar for the appropriate / interested faculty. This part is critical to the machine being integrated into the curriculum at the CED, and to spread awareness and excitement for the tool.

summary ::

The goal of this study is not to get the machine online temporarily to cut a few projects, it is to make this valuable tool indefinitely accessible to the students and faculty at the CED; irrespective of graduate or undergraduate status under the veil of the CAD/CAM lab. Any and all advice/ aid is welcome and encouraged, and thanks to all that have shown interest and have helped to get this investigation online thus far. The innovative application of the tool through various explorations cutting techniques and materials will be a byproduct of this study, some of which hopefully will remain in some form [digital of physical] for reference.