NORCO COLLEGE
Career & Technical Education

Advisory Committee Meeting 2020

Agenda

Online Zoom Session
April 30, 2020

Anticipated attendees: Farshid Mirzaei, Full Time Faculty Norco College
Ashlee Johnson, Full Time Faculty Norco College
Industry Advisers: Gary Miller, Miller Architecture
Gilbert Alcala, Alcala Architecture
Elena Cisneros, Roadsafe Traffic
George Balteria, Northeast Trees
Dave Koons, Architect
Tim Mast Jr., Cryoworks

12:30 pm – 12:45 pm	Welcome & Introductions
12:45 pm – 1:45 pm	Advisory Board Discussions *Industry subgroups & Norco College faculty* *Industry trends, program curriculum feedback & workforce preparedness* *Follow-up & next steps, internships & interest card*
1:45-1:50pm	Closing Remarks and Adjournment

Advisory Meeting Notes

1. Introductions- **Faculty introduced themselves and Advisory Committee members introduced themselves. Advisory Committee Members in attendance: Tim Mast Jr., Elena Cisneros, George Balteria, Dave Koons, and Gilbert Alcala**

2. Advisory members to review Programs-Ashlee and Farshid presented the curriculum and stated desire to revise curriculum for 1 or more of the programs and needed advisory feedback.

    a. **Feedback and approval for Drafting Technology curriculum**.-
    DFT/ELE 27 Technical Communications Course (3 units) is optional and faculty presented option of making it mandatory.
    Gary Miller recommended foundations of sketching/drafting and software.
    MAT-36 Trigonometry discussed if it is needed to meet industry standards.
    Dave Koons agreed Trigonometry should be removed from mandatory curriculum and make it optional or remove altogether and add it to Mechanical Drafting Program instead. ARE-24 and 25 with Revit updates to possibly add to curriculum. Drafting should be very foundational and feeding into the Architectural and Engineering programs and set transfer students up for success. (Classes Tech Communication DFT/ENE 27, 28, 22 to stay) Recommendation: Removal or optional Class MAN 56, Blueprint Reading DFT/ENE 51 better to offer it as an option between print trading for Construction or machining. That is like more focus to your type of work or pre reading for construction and architecture.
    That way the student has got those two options, because before that they were just forced on drafting technology to machining only, but if we offer it with the both options It can serve both construction and Machining/Mechanical Drafting.
    b. **Feedback and approval for 3D Mechanical Drafting Program-** Tim Mast Jr. Recommended Hand Sketching/Drafting Curriculum to put as first course/class to take in program. Add AutoCAD and Engineering Technology to the Drafting Certificate. Dave Koons and Tim Mast Jr. both stated a high demand from manufacturers for "Shop Drawings" that can be in their offices and do the shop drawings that go back to the architect. (Structural Shop Drawings Jobs like certificate/degrees at Mt. Sac) Steel Structures and metals construction. (Add Classes: DFT/ENE 27 Technical Communication)
    c. **Feedback and approval for Architectural Graphics curriculum**-Gary Miller recommended need for students to know how to do drafting, of floor plans as example, as well as operating the software. Miller emphasized that students learn not just how to operate software but understand what the objects mean that they are drawing and that

they learn drafting conventions such as dimensioning, what information belongs on which sheets. Drafters from tech programs draw a technical picture but with little or no information. Tim Mast Jr. emphasized basics of industry terminology and definitions as well as office protocol as part of Technical Communication class. Dave Koons recommended Blueprint Reading or Document Reading Class needed. (Add : DFT/ENE-51 Blueprint reading, Technical Comm DFT/ENE 27, ARE-25) Suggestion from Dave Koons and Ashlee Johnson on a Basic Project Management Class.

a. **Industry standards** - Industry is utilizing REVIT in addition to or instead of AutoCAD. Recommendation to advertise our ARE-24 and 25 classes that teach REVIT so we meet 10 + student enrollment. Entry level positions are being asked to do Specifications, so training in Specifications is important.
b. **State/industry certifications** – Suggest to give options to students in all certificates if they want to pursue higher degree later on to be able to transfer their courses. AA as an option.
c. **Suggestions:** Elena Cisneros recommended emphasis on Civil Engineering Classes in Drafting Technology or Architecture curriculum to add as Optional Classes to obtain certificate. Discussions over the importance that students understand the 2 pathways of certificate and/or associate degree and transfer capacity and that all the industry professions agreed students in this field may want to go back to school to get more education, so classes will hopefully all be made transferable.

3. **Faculty to review curriculum changes and any hardware/software upgrades.**
    a. **What else should we consider to remain current with equipment, hardware, and software used in industry?** Industry is utilizing REVIT in addition to or instead of AutoCAD. Recommendation to advertise our ARE-24 and 25 classes that teach REVIT so we meet 10 + student enrollment. Virtual Reality Flybys training, software, and technical drafting, RHINO. Miller's opinion: there is greater demand for REVIT skills than Autocad.

4. **Review employment procedures:**
    a. **How do advisory members typically recruit employees?** Online job boards, some advisories reach out to local colleges to post their jobs on College Job Board.
    b. **Is there an internship process, if not how can we develop one?** Partnership with CSI could provide avenue for internships. NCARB has internship program to get one ready for license exam and meet state requirements. https://www.ncarb.org/gain-axp-experience (Course content FM). Miller suggested teaching the 32 CSI number system. Might only take one or two hours to introduce this numbering system. Many documents use this system in their annotation on drawings now. Likely to become much more prevalent.

c. **What qualifications do they typically ask for?** Typically Certificate or Associate Degree is a minimum qualification. 4 year degrees are encouraged.
d. **Are there any recommendations for students to increases employability?-.** A recommendation from Gary Miller on a Pre-Architecture Program at Norco College. Recommendation from Dave Koons on industry partnerships, guest speakers in the classrooms for students, participation in Career Days. Advisory feedback that there is a High demand for Mechanical Drafting Students and pay rate high. Suggestion of Intro to Specs Specifications or Outline Specs course by Dave Koons, industry partner. He volunteered to do lectures and it is a high in demand job skill for Drafting

5. **What could we do to improve real world, on-the-job, work experience that students receive during their program?** Dave Koons suggested faculty provide in class guest speakers of industry professionals, tours of industry partner's offices and job sites. Gil Alcala recommends field trips to understand 3 D versus 2D training to conceptualize the drawing and interpret real word, on-site drafting. George Balteria recommended field trips and cross-overs with the Construction Technology and bringing in real word drawings from projects straight from the city or straight from the company.

Summary of certificate for updates:

Drafting Technology Certificate:

Required Courses: 14-15 units

Course		Title	Units
DFT/ENE21		Drafting	3
DFT/ENE27		Technical Communications	3
DFT/ENE30		Computer Aided Drafting	3
DFT/ENE51	OR	Print Reading	2-3
CON 62			
ENE41		Engineering Graphics	3

(ENE 41 is capstone project based, equivalent to ENE 22 plus ENE 28 to transfer to CSU)

Plus, an additional 6-8 units from the following elective courses:

Course	Title	Units
DFT/MAT 60	Math for Engineering Technology	3
OR	OR	OR
MAT 36	Trigonometry	4
CON60	Introduction to Construction	3
ARE37	Architectural Design	3
DFT/ENE42	SolidWorks I	3
MAN 56	CNC Machine Set-up and Operation	4

Total Program Units: 20 -23 units

3D Mechanical Drafting Certificate:

Required Courses: 20 units

Course	Title	Units
DFT/ENE21	Drafting	3
DFT/ENE27	Technical Communications	3
DFT/ENE51	Blueprint Reading	2
DFT/ENE42	SolidWorks I	3

ENE52	Geometric Dimensioning & Tolerancing	3 (updated)
DFT/ENE30	Computer Aided Drafting	3
DFT/ENE42B	SolidWorks II	3

Elective Courses: 3-5 units

Course	Title	Units
MAT36	Trigonometry	4
MAN56	CNC Machine Set-Up and Operation	4
ENE41	Engineering Graphics	3
MAN35	Computer Aided Manufacturing-Mastercam	5

Total Program Units: 23-25 units

ARCHITECTURAL GRAPHICS CERTIFICATE:

Required Courses: 21 units

Course	Title	Units
DFT/ENE21	Drafting	3

DFT/ENE27	Technical Communications	3
CON62	Print Reading for Construction	3
ARE24	Architectural Drafting	3
ARE25	Advanced Architectural Drafting	3
DFT/ENE30	Computer Aided Drafting	3
ARE37	Architectural Design	3

Plus, an additional 6 units from the following elective courses:

Course	Title	Units
ARE35	History of Architecture- Beginnings through Gothic	3
ARE36	History of Architecture: Renaissance to Modern	3
CON60	Introduction to Construction	3
CON74	Construction Estimating	3

Total Program Units: 27 units

Reference to Norco College course catalog

On an E-vote sent out on 5/1/2020, the committee voted on the updates above and replied for approval:

Farshid Mirzaei	YES
Ashlee Johnson	YES
Gary Miller, Miller	YES
Gilbert Alcala, Alcala	YES
Elena Cisneros	YES
George Balteria	YES
Dave Koons, Architect	YES
Tim Mast Jr.	YES