




The New CTE Includes Trades and Professions

Lawrence Rice

Kealakehe High School

Lawrence_Rice@notes.k12.hi.us

larryjrice@hotmail.com



IET Pathways

(Industrial and Engineering Technology)

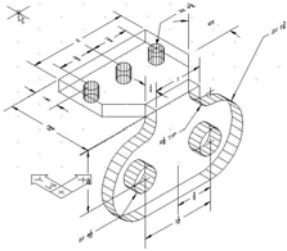
Program of Study	Program of Study 1st Course	Program of Study Successive Course(s)
IET Automotive Technology	TI01 IET Career Pathway Core	T143 Automotive Technology
IET Metal Working Technology		TI23 Metals Technology
IET Building and Construction		TI83 Bldg. & Construction Technology
IET Electrical Installation		TI70 Electricity and Electronics
IET Electronics and Electrical Engineering		TI63 Electronic Technology
IET Engineering		T104 Applied Technology Education
IET Designed Environment (Architecture)		TI33 Drafting Technology
IET Computer Networking *		TI73 Networking Fundamentals and LAN
IET Computer Technician Certification *		TI60 Computer Electronics

A++ and Cisco eMagnet Academy multi-year programs not shown (IET Core not required)



Professional Design Modules

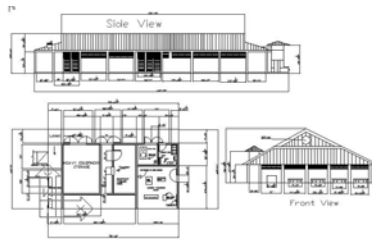
Drafting



**Architecture
(Houses)**



**Architecture
(Buildings)**



Interior Design



Landscape Design



Surveying



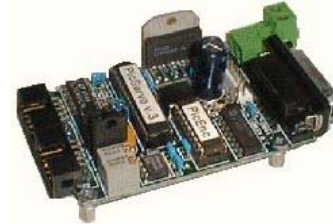
Urban Design



Industrial Design



Electronics Design



Technical Illustration



Ocean Engineering



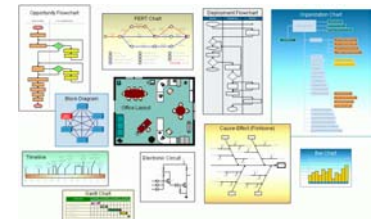
Cartography



Aeronautics/Aerospace Design



Programming





Drafting

Student Activities

- 2D Drawings (Board and CAD)
- Orthographic Drawings
- 3D Drawings (CAD)

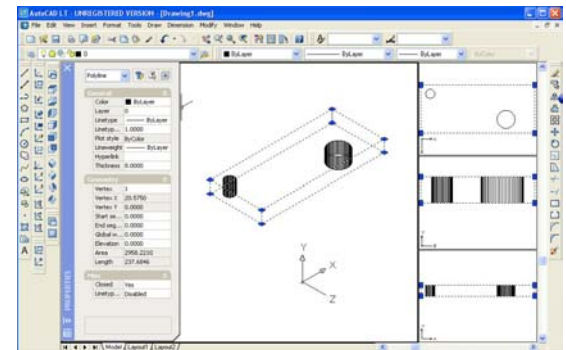
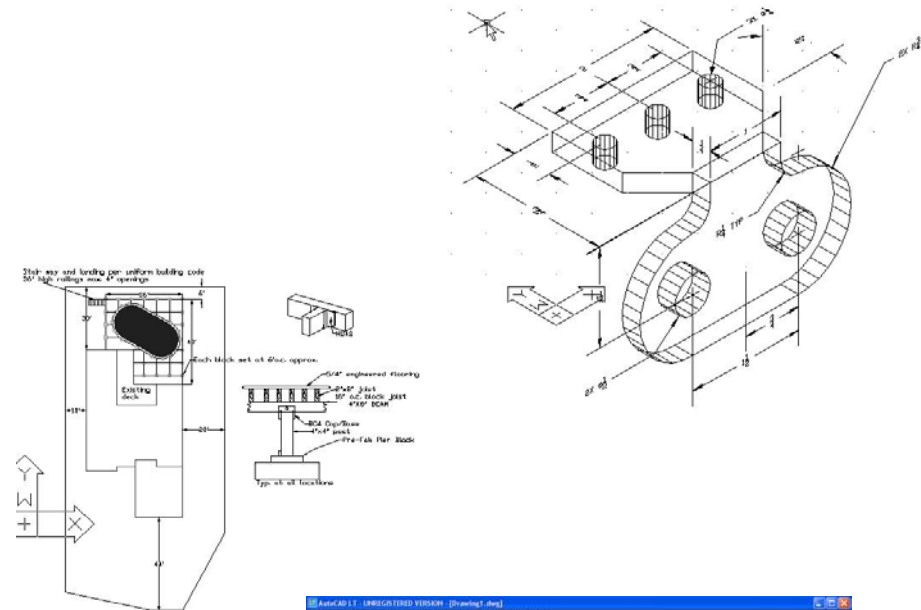
Resources

- Drafting Equipment
- AutoCAD LT Software
- Mechanical Drawing Textbook

Industry Guidance

- Kona Architects
- Autodesk

11/7/2004



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Architecture (Houses)

Student Activities

- House Design
(Floorplans, elevations, sections, framing, schedules, materials, cost, etc.)
- Field Trips
- HTEA Competition

Resources

- Softplan
- Building Codes
- House Design Textbooks
- Floorplan web sites



Industry Guidance

- Architects
- C.O.H. Building Dept.
- A.I.A.



Architecture (Buildings)

Student Activities

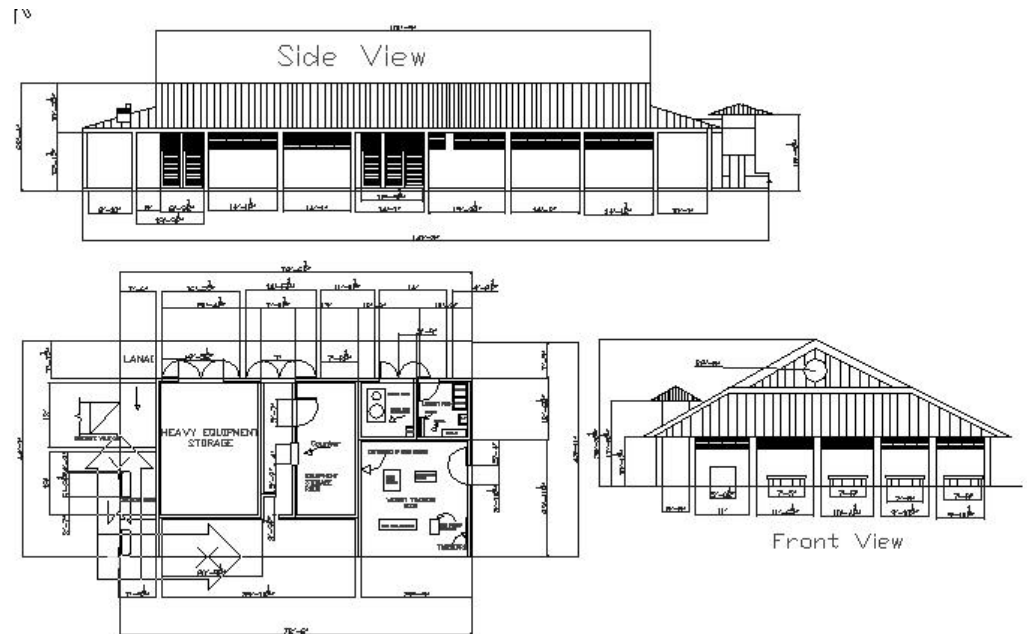
- Floorplans (orthographic)
- Field Trips

Resources

- AutoCAD LT
- Building Codes
- KHS Blueprints

Industry Guidance

- Civil Engineering firms
- H.S.P.E.





Interior Design

Student Activities

- Design Kitchens
- Design Bathrooms
- Lowe's/Home Depot Visits

Resources

- Softplan
- 2020Design
- Textbooks



From www.Improvenetn.com



From www.kitchen-cabinets-design.com

Industry Guidance

- Lowe's
- Home Depot



Landscape Architecture

Student Activities

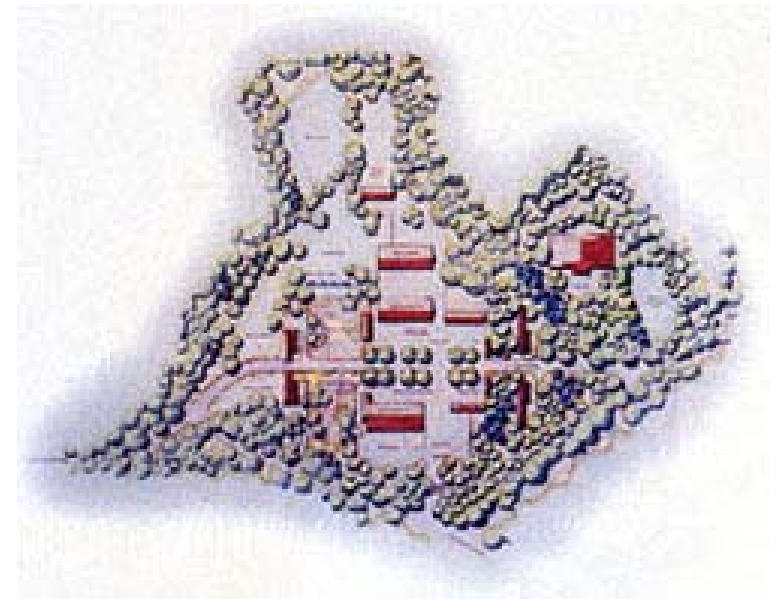
- Residential Landscape Designs
- Industrial Landscape Designs

Resources

- ESRI ArcGIS
- Garden Graphics Dynascape
- Textbooks

Industry Guidance

- Landscape Architects
- A.S.L.A.



From www.LAProfession.org



Surveying

Student Activities

- Boundary Surveys
- Property Surveys
- Site Surveys



Resources

- Transit and Tape
- Level and Rod
- GPS
- Softplan Site
- ESRI Arc/GIS



Industry Guidance

- Toshiba America Foundation
- Survey Firms



Cartography / Mapping

Student Activities

- Map Cultural Sites, parks, etc.
- Marine Study / Environmental Science
- Endangered / Native Species

Resources

- ArcGIS
- GPS Handhelds
- NOAA Ocean Map
- Hawaii County Map
- Textbooks
- ArcGIS IMS (Web Publication)



Industry Guidance

- ESRI
- MATE
- County of Hawaii
- NOAA, USGS, NPS



Urban Design

Student Activities

- Draw buildings, transportation, etc.
- Bridge Design
- Plan Sketches

Resources

- ESRI ArcGIS 3D Analyst
- Sketchup (3D layout)
- West Point Bridge Design
- Urban Design Textbooks



From www.LAProfession.org

Industry Guidance

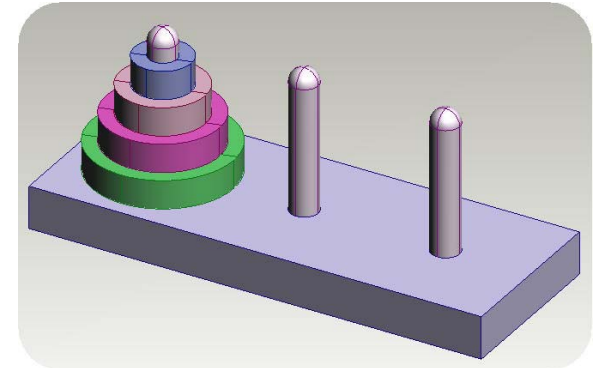
- County of Hawaii



Industrial Design

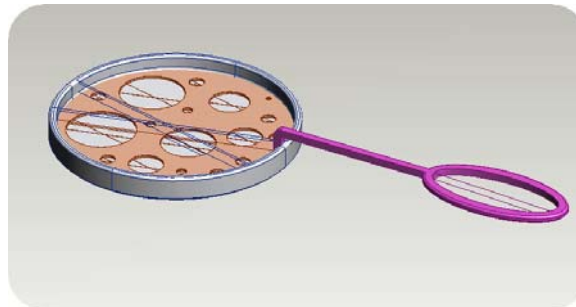
Student Activities

- Solids Modeling
- Mechanical Analysis
- Packaging



Resources

- PTC/ProDesktop
- PTC/ProEngineer
- Pro/Desktop Training
- Textbooks



Industry Guidance

- PTC
- AutoCAD



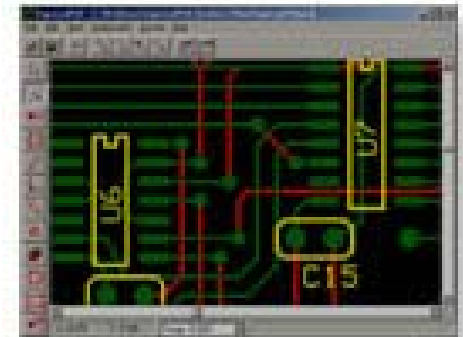
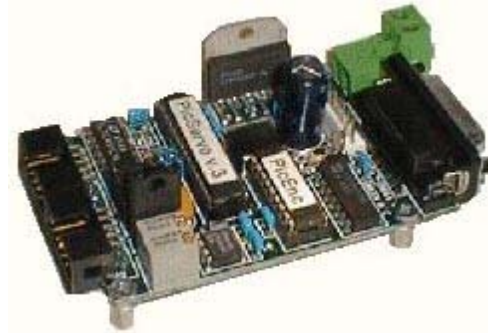
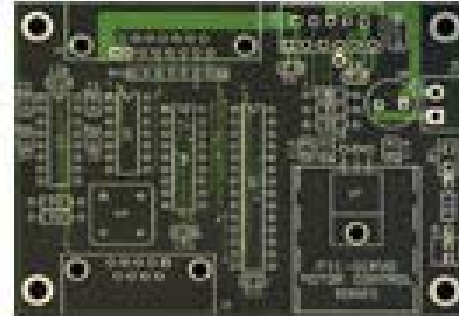
Electronic Design

Student Activities

- Simple Circuit Design
- PCB Design

Resources

- ExpressSCH
- ExpressPCB
- EKI PCB Kits
- EKI lessons



From www.ExpressPCB.com



Ocean Engineering (ROV)

Student Activities

- Underwater ROV design and build
- Marine GIS
- Competition

Resources

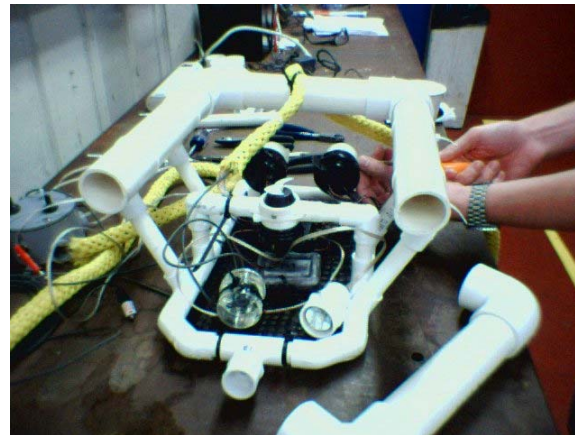
- ROV Supplies
- ROV Textbook

Industry Guidance

- MATE Center
- SCUBA Stores



From www.Benthos.com



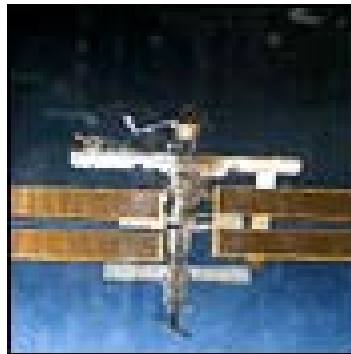
From University of Wisconsin Sea Grant



Aeronautics/Aerospace Design

Student Activities

- Model Building
- Model Flying
- Navigation
- Physics of Flight



From www.nasa.gov



From www.Cessna.com

Resources

- Flying Videos
- Model Materials
- Flight Books
- Navigation Charts and Instruments
- Web research



From www.NewPiper.com

Industry Guidance

- Flying Academies
- Tour Operators



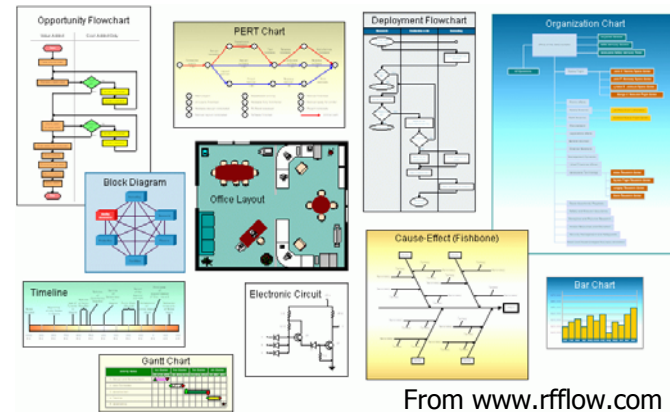
Software Design and Programming

Student Activities

- Design and Flowcharting
- Basic and Java Programming

Resources

- Visual Studio
(includes Basic, C, C++, and Java)
- Oracle DBMS and Java
- Programming Textbooks



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Hawaii DOE Standards for Professional Design



Industrial and Engineering Technology

- ✓ Students relate Technology systems to needs and functions of society as users of various technological systems and processes.
- ✓ Students demonstrate the skills and knowledge of a technology problem solver by effectively applying the design process.
- ✓ Students use and/or apply technical terms, symbols, conventions, and resources to understand and express ideas and solve technological problems.
- ✓ Students develop plans for and progress toward IET careers, including the demonstration of understanding and skills related to components of an effective organization/industry.
- ✓ Students apply concepts of physics in product/system maintenance, repair, design, and construction.
- ✓ Students apply concepts of forces and motion in product/system maintenance, repair, design, and construction.
- ✓ Students demonstrate understanding that physical properties make some substances better for certain uses than others and that physical properties may be manipulated or changed to fulfill product/system needs
- ✓ Students practice oral, written, and comprehension skills to communicate effectively in settings appropriate to the IET work environments.
- ✓ Students recognize risks and potentially hazardous situations to achieve a safe and healthy environment

Mathematics

- ✓ Understand/represent numbers
- ✓ Use computational tools
- ✓ Attributes, units, and measurement
- ✓ Properties/relationships of objects
- ✓ Visualization and spatial reasoning

Science

- ✓ Students apply the values, attitudes, and commitments characteristic of an inquiring mind.
- ✓ Students use the problem-solving process to address current issues involving human adaptation in the environment.
- ✓ Students examine the nature of matter
- ✓ Students analyze and evaluate the interdependence of science, technology, and society

General Learner Outcomes (GLOs)

- ✓ Self-directed learner
- ✓ Community Contributor
- ✓ Complex Thinker
- ✓ Quality Producer
- ✓ Effective Communicator
- ✓ Effective and Ethical User of Technology



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