Torrance USD Program of Study for ENG Engineering Design Pathway 152
Industry Sector: Engineering \& Architecture (ENG) $\quad$ Pathway: Engineering Design (152)
Torrance Unified School District (TUSD) Program of Study

| Site | Grade | English | Math | Social Studies | Science | Other Required Courses or Recommended Electives |  |  | Career Technical Education Course | Occupations, Degrees, \& Certificate Programs |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 7 | English 7 | Math 7 | Soc. St. 7 | Science 7 | -- | PE | -- | $\begin{aligned} & \text { PLTW Comp. Sci. } \\ & \text { CSIM \& AC } \end{aligned}$ | Occupations (High School Diploma) <br> - Non-Destructive Testing Specialist <br> - Power Plant Operator <br> Occupations (Training/2-Yr Degree) <br> - Engineering Technician (Automotive, Electrical, Mechanical, Civil, Robotics) <br> - Industrial Machine Technician <br> - Mechanical Engineering Design Technician <br> Occupations (4-Yr Degree/Higher) <br> - Engineer (various specialties) <br> - Engineer Technologists (various specialties) <br> Pre/Apprenticeship Programs <br> - Aero-Flex Pre-Apprenticeship <br> - Aero-Flex Apprenticeship <br> Degree Programs <br> BS Degrees in Engineering: <br> - Computer <br> - Aerospace <br> - Electrical <br> - Civil <br> - Mechanical <br> - Environmental <br> - Biomedical <br> - Chemical <br> - Project Management <br> Industry Certifications/Licenses <br> Offered through Precision Exams <br> - Engineering Principles 1 <br> - CAD Mechanical Design 1 <br> Offered at El Camino <br> - Mechanical Engineering Design Technician |
| T | 8 | English 8 | Math 8 | Soc. St. 8 | Science 8 | -- | PE | -- | PLTW Engineering DM \& AR |  |
| R | 9 | English 1 | Algebra 1 | -- | Biology/H | World Lang | PE | Health | *PLTW IED |  |
| N | 10 | English 2 | Geometry/H | *World History | Chemistry/H | World Lang | PE | -- | * PLTW POE |  |
| E | 11 | English 3 or AP Comp | Algebra 2/H | *US History | Physics, AP Chemistry, or AP Physics 1 | World Lang | -- | -- | *PLTW DE, *PLTW AE, or AP CSP |  |
| N | 12 | *English 4 or AP Lit | Pre-Calculus/H | Gov/Econ | AP Physics 1, 2, or C | -- | -- | Fine Arts | *PLTW EDD |  |
| F I E | $\begin{aligned} & \text { UC } \\ & \text { CSU } \end{aligned}$ | 4 Yrs Req | 3 Yrs Req <br> 4 Yrs Rec | 2 Yrs Req | 2 Yrs Req 3 Yrs Rec | 2 Yrs Req 3Yrs Rec | -- | 1 Yr Fine Arts Req 1 Yr Elective Req | CTE is not req for UC/CSU/TUSD |  |
| D | TUSD | 4 Yrs Req | 2 Yrs Req | 2 Yrs Req \& Econ/Gov | 2 Yrs Req | 1 Yr Lang or Fine Art Req | $\begin{aligned} & 2 \mathrm{Yrs} \\ & \text { Req } \end{aligned}$ | 1 Sem Health Req | These CTE courses meet the Yr 3 Sci \& Elective Req. |  |
|  |  |  | cates a cour | hat has the your high s | tion of earning ool counselor for | school cre tails on dual | $\begin{aligned} & \text { t AND } \\ & \text { rollme } \\ & \hline \end{aligned}$ | ge credit through ticulation) | Camino |  |
|  |  |  | neral Educa | Requiremen | for ECC Major |  |  | Engineering AS | ree Requirements |  |
| $\begin{aligned} & \text { C } \\ & \text { A } \\ & \text { M } \\ & \text { I } \\ & \text { N } \\ & \text { O } \\ & \text { C } \\ & \text { O } \\ & \text { L } \\ & \text { E } \\ & \text { G } \end{aligned}$ | $\begin{gathered} 13 \\ \downarrow \\ 15 \end{gathered}$ | Required C <br> Natural Scie <br> Social and Humanities Language a <br> - One Health \& PE <br> - Exem obtai <br> Mathematic <br> - Optio <br> - Optio <br> Electives <br> - Additi <br> - Cour | gories for ECC <br> es (3 units) <br> havioral Science <br> units) <br> Rationality (6 un <br> urse from each s <br> 3 units) <br> ion Options: Pas approval for the P <br> 1: Pass the Math <br> 2: Pass one app <br> nal units needed <br> s cannot double | AS Degree <br> (3 units) <br> s) <br> ction: A \& B <br> the Contempo etition for Milita <br> Competency T ved Math clas <br> total 60 units unt in multiple | ary Health Waive Service Credit. <br> st with a C or bette <br> categories | xam or | Engine <br> Requir <br> *ETEC <br> *ETEC <br> *ETEC <br> ETEC <br> Machin <br> Requir <br> *ETEC <br> *ETEC <br> Machin <br> Welding <br> Comp A <br> Elec/Co <br> Manufa <br> Manufa | g Technician 16 Units <br> PLTW POE <br> PLTW IED <br> PLTW DE <br> PLTW CIM <br> ool Tech 101 <br> 9 Units from: <br> PLTW AE <br> PLTW EDD <br> ool Tech 16 <br> d Design/Draft <br> Hdwr Tech 22 <br> ing Tech 70 <br> ing Tech 75A/B | Engineering Technology <br> Required 26 Units <br> *ETEC 10 PLTW POE <br> *ETEC 12 PLTW IED <br> *ETEC 14 PLTW DE <br> ETEC 16 PLTW CIM <br> Physics 2A <br> Chemistry 1A <br> Mathematics 190 <br> Required 3-7 Units from: <br> *ETEC 15 PLTW AE <br> *ETEC 18 PLTW EDD <br> Comp Info Sys 13 <br> Elec Comp Hdwr Tech <br> 110C <br> Engineering 1 <br> Engineering 9 <br> Machine Tool Tech 16 <br> Manufacturing Tech 70 <br> Manufacturing Tech 75A/B |  |
|  |  | Please note, | ditional courses | needed to | the UC/CSU | sfer Requit | nts. S | ur ECC counselor | details. |  |

Revised September 2020

Industry Sector: Engineering \& Architecture (ENG)
Pathway: Engineering Design (152)
Torrance Unified School District (TUSD) Program of Study

| Site | $\begin{gathered} \text { Grad } \\ \mathrm{e} \end{gathered}$ | English | Accelerated Math <br> (Preferred) | Social Studies | Accelerated Science (Preferred) | Other Required Courses or Recommended Electives |  |  | Career Technical Education Course |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| T | 7 | English 7 | Accelerated Math 7 | Soc. St. 7 | Science 7 | -- | PE | -- | PLTW Comp. Sci. CSIM \& AC |
| O | 8 | English 8 | Algebra 1 | Soc. St. 8 | Biology H | -- | PE | -- | PLTW Engineering DM \& AR |
| R | 9 | English 1 | Geometry/H | -- | Chemistry H | World Lang | PE | Health | *PLTW IED |
| N C | 10 | English 2 | Algebra 2/H | *World History | AP Chemistry | World Lang | PE | -- | * PLTW POE |
| E | 11 | English 3 or AP Comp | Pre-Calculus/H | *US History | AP Physics 1 | World Lang | -- | -- | *PLTW DE, *PLTW AE, or AP CSP |
| $\begin{aligned} & \mathbf{N} \\ & \mathbf{I} \end{aligned}$ | 12 | *English 4 or AP Lit | AP Calculus $A B$ or $B C$ | Gov/Econ | $\begin{aligned} & \text { AP Physics } \\ & 2 \text { or } C \end{aligned}$ | -- | -- | Fine Arts | *PLTW EDD |
| $\begin{aligned} & \mathrm{F} \\ & \mathrm{I} \\ & \mathrm{E} \end{aligned}$ | $\begin{gathered} \text { UC } \\ \text { CSU } \end{gathered}$ | 4 Yrs Req | 3 Yrs Req <br> 4 Yrs Rec | 2 Yrs Req | 2 Yrs Req 3 Yrs Rec | 2 Yrs Req 3Yrs Rec | -- | 1 Yr Fine Arts Req 1 Yr Elective Req | CTE is not req for UC/CSU/TUSD |
| D | $\begin{gathered} \text { TUS } \\ \mathrm{D} \end{gathered}$ | 4 Yrs Req | 2 Yrs Req | 2 Yrs Req \& Econ/Gov | 2 Yrs Req | 1 Yr Lang or Fine Art Req | $\begin{aligned} & 2 \mathrm{Yrs} \\ & \text { Req } \end{aligned}$ | 1 Sem Health Req | These CTE courses meet the Yr 3 Sci \& Elective Req. |

(has he option of earning high school creait AND college creait through El Camino
(see your high school counselor for details on dual enrollment \& articulation)

## General Education Requirements for ECC Majors

## Required Categories for ECC AS Degree

Natural Sciences (3 units)
Social and Behavioral Sciences (3 units)
Humanities (3 units)
Language and Rationality ( 6 units)

- One course from each section: A \& B

Health \& PE (3 units)

- Exemption Options: Pass the Contemporary Health Waiver Exam or obtain approval for the Petition for Military Service Credit.
13
$\downarrow$
15


## Mathematics

- Option 1: Pass the Math Competency Test
- Option 2: Pass one approved Math class with a C or better Electives
- Additional units needed to total 60 units
- Courses cannot double count in multiple categories

ECC Engineering AS Degree Requirements

## Engineering Technician

 Required 16 Units *ETEC 10 PLTW POE *ETEC 12 PLTW IED *ETEC 14 PLTW DE ETEC 16 PLTW CIM Machine Tool Tech 101
## Require 5-9 Units from:

 *ETEC 15 PLTW AE *ETEC 18 PLTW EDD Machine Tool Tech 16 WeldingComp Aided Design/Draft Elec/Comp Hdwr Tech 22 Manufacturing Tech 70 Manufacturing Tech 75A/B

Engineering Technology Required 26 Units *ETEC 10 PLTW POE *ETEC 10 PLTW POE
*ETEC 12 PLTW IED *ETEC 14 PLTW DE ETEC 16 PLTW CIM
Physics 2A
Chemistry 1A
Mathematics 190

## Required 3-7 Units from:

*ETEC 15 PLTW AE
*ETEC 18 PLTW EDD Comp Info Sys 13
Elec Comp Hdwr Tech 110C Engineering 1
Engineering 9
Machine Tool Tech 16 Manufacturing Tech 70 Manufacturing Tech 75A/B

Please note, additional courses are needed to meet the UC/CSU Transfer Requirements. See your ECC counselor for details.

Occupations, Degrees, \& Certificate Programs

Occupations (High School Diploma)

- Non-Destructive Testing

Specialist

- Power Plant Operator

Occupations (Training/2-Yr Degree)

- Engineering Technician (Automotive, Electrical, Mechanical, Civil, Robotics)
- Industrial Machine Technician
- Mechanical Engineering Design Technician

Occupations (4-Yr Degree/Higher)

- Engineer (various specialties)
- Engineer Technologists (various specialties)

Pre/Apprenticeship Programs

- Aero-Flex Pre-Apprenticeship
- Aero-Flex Apprenticeship

Degree Programs
BS Degrees in Engineering

- Computer
- Aerospace
- Electrical
- Civil
- Mechanical
- Environmental
- Biomedical
- Chemical
- Project Management

Industry Certifications/Licenses Offered through Precision Exams

- Engineering Principles 1
- CAD Mechanical Design 1

Offered at El Camino

- Mechanical Engineering Design Technician

