Val Tech
The Valencia Academy

Placentia Yorba Linda Unified School District

Doug Domene, Ed.D.
Superintendent

Jim Bell
Principal
Director of Valencia Academy

Rick Lopez
Assistant Principal

Mark Stanley
Academy Counselor

Mike Guest
Val Tech Coordinator
www.vhstigers.org

Current edition
# Val Tech: Frequently Asked Questions

PLACENTIA-YORBA LINDA UNIFIED SCHOOL DISTRICT

Table of Contents

<table>
<thead>
<tr>
<th>Question</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is Val Tech?</td>
<td>4</td>
</tr>
<tr>
<td>Why should students enter the Val Tech Program?</td>
<td>4</td>
</tr>
<tr>
<td>What are the Val Tech entrance requirements?</td>
<td>4</td>
</tr>
<tr>
<td>What are Val Tech’s established pathways?</td>
<td>4</td>
</tr>
<tr>
<td>What does the internship involve?</td>
<td>5</td>
</tr>
<tr>
<td>What other requirements must Val Tech students meet?</td>
<td>5</td>
</tr>
<tr>
<td>What must students do to successfully complete the program?</td>
<td>5</td>
</tr>
<tr>
<td>What are the application criteria for Val Tech?</td>
<td>6</td>
</tr>
<tr>
<td>What are the benefits of a Val Tech high-school education?</td>
<td>6</td>
</tr>
<tr>
<td>Val Tech Technology Pathways</td>
<td>7</td>
</tr>
<tr>
<td>Pathways and Selected Courses</td>
<td>8</td>
</tr>
<tr>
<td>Val Tech Elective Courses by Grade Level</td>
<td>9</td>
</tr>
<tr>
<td>PYLUSD Graduation Requirements</td>
<td>10</td>
</tr>
<tr>
<td>Val Tech Requirements by Grade Level</td>
<td>10</td>
</tr>
<tr>
<td>Sample Val Tech Technology Pathway Sequence Of Courses</td>
<td>11</td>
</tr>
<tr>
<td>Sample Val Tech 4-Year Plan (General)</td>
<td>12</td>
</tr>
<tr>
<td>Sample Val Tech 4-Year Plan (CSU or UC)</td>
<td>13</td>
</tr>
</tbody>
</table>

APPENDIX/ VAL TECH COURSE DESCRIPTIONS........................................... 14-23

**COMPUTER TECHNOLOGY 1A/1B (REQUIRED)**........................................... 14

**ARTS & COMMUNICATION**
- Publications/Newspaper ........................................................................ 14
- Publications/Annual (Yearbook) .......................................................... 15
- Creative Writing/Keystones .................................................................. 15
- Technical Writing—LA4 ......................................................................... 15
- Photography A ....................................................................................... 15
- Photography B ....................................................................................... 15
- Advanced Photography .......................................................................... 15
- AP Photography ..................................................................................... 16
- Electronic Art/Design ......................................................................... 16
- Advanced Electronic Art/Design ......................................................... 16
- Introduction to Animation .................................................................... 16
- Animation Projects .............................................................................. 16
- Media Productions ................................................................................ 16
- Video Production I & II ....................................................................... 17
## BUSINESS & COMPUTER SCIENCE

### BUSINESS
- Accounting.................................................................................................................. 17
- Computerized Accounting......................................................................................... 17
- Business Fundamentals............................................................................................ 17

### BUSINESS and MATHEMATICS
- Trigonometry And Math Analysis--Honors............................................................. 18
- IB Math Methods SL.................................................................................................. 18
- IB Math HL Y1/Y2..................................................................................................... 18
- AP Statistics.............................................................................................................. 18
- AP Calculus............................................................................................................... 18

### COMPUTER SCIENCE
- Computer Maintenance............................................................................................ 19
- Computer Programming with JAVA .......................................................................... 19
- Computer Programming with Visual Basic.............................................................. 19
- AP Computer Science-A.......................................................................................... 19
- AP Computer Science-AB.......................................................................................... 20
- IB Computer Science............................................................................................... 20
- Introduction to Web Page Design............................................................................. 20
- Advanced Web Page Design.................................................................................... 20
- Computer Networking 1 & 2.................................................................................... 21
- Computer Networking 3 & 4..................................................................................... 21

### SCIENCE & TECHNOLOGY
- Pre-Engineering A/B............................................................................................... 22
- Advanced Pre-Engineering....................................................................................... 22
- Physics....................................................................................................................... 22
- AP Physics.................................................................................................................. 22
- Robotics...................................................................................................................... 23
- Introduction to Computer-Aided Design (CAD I).................................................... 23
- Architectural/Engineering CAD (CAD II)............................................................... 23
- Advanced CAD (CAD III)........................................................................................ 23

### INTERNSHIP SEMINAR (REQUIRED)................................................................. 24

For More information................................................................................................. 25

---

Copyright © Michael Guest 2003-Present

All rights reserved. No portion of this book may be reproduced, stored in a retrieval system, or transmitted in any form or by any means—electronic, mechanical, photocopy, recording, or any other—without the prior permission of the Val Tech Coordinator.
What is Val Tech?
Val Tech is a dynamic technology program that allows students to select an educational path that will enable them to meet their long-term academic or career goals. Depending on their choice of classes, students can graduate with a Val Tech Certificate as well as a high-school diploma geared for admission either to any top-level four-year university (i.e., University of California) or to a California State University. Students can also select classes that prepare them for a career in technology immediately upon their graduation from high school.

Val Tech is designed for highly motivated, academically talented students who value an opportunity to begin preparing now for a rewarding career in technology in the field of the arts, communication, business, computer science, science, or engineering.

Designed for students who have a special interest in and aptitude for technology, Val Tech encourages academic excellence as it prepares students for their future career in the highly technological 21st century.

This booklet is designed to answer some of the frequently asked questions about Val Tech. If you have other questions or would like to speak to someone about the program, please contact one of the people listed on page 25.

Why should students enter the Val Tech Program?
- To earn a Tech Diploma
- To acquire high-level technology skills
- To prepare for college and university technology courses
- To prepare for a specialized technology certificate program
- To satisfy their interest in and to further develop their aptitude for technology

What are the Val Tech entrance requirements?
- A grade of B or better in Algebra 1 (quarters 1 and 2)
- For 1st and 2nd quarters a grade of B in GATE or Honors Language Arts OR grade of A in regular Language Arts INCLUDING English/Language Arts CST scores at or above 370
- Two letters of recommendation from middle-school core teachers

What are Val Tech’s established pathways?
Val Tech has established pathways in the following areas:
- Arts & Communication
- Business
- Computer Science
- Science & Technology (Engineering)

Two hundred forty (240) credits are needed to graduate with a Val Tech diploma; a minimum of 50 credits must be in technology classes from the prescribed pathways. Those 50 credits must include an internship. Students can schedule this 150-hour, ten-credit internship during the summer between their junior and senior years or during their senior year (within or outside the traditional school day). The internship will culminate in a research project, a
reflective essay, and an oral presentation before an interview panel comprised of PYLUSD personnel and community members. To be eligible for a tech diploma, the Val Tech student must also construct an electronic portfolio and present this to the interview panel.

Every Val Tech student must meet all district graduation requirements. As previously mentioned, students pursuing a tech diploma can also fulfill both University of California and California State University entrance requirements. The Class of 2006 was the first group of Valencia students eligible for a tech diploma.

What does the internship involve?
All internships are unpaid, and the Val Tech Coordinator and/or the Director of Valencia Academy must approve each internship. Students can schedule this 150-hour, ten-credit internship during the summer between their junior and senior years or during their senior year. (Please refer to What are Val Tech’s established pathways? Pg. 4) Students can make arrangements for their internship in the technology area of their own interest and choosing. Val Tech students may also arrange a qualifying internship at VHS or another local school. The internship will culminate in a research project, a reflective essay, and an oral presentation before an interview panel comprised of PYLUSD personnel and community members. To be eligible for a tech diploma, the Val Tech student must also construct an electronic portfolio and present this to the interview panel. A special seminar conducted during the spring of the junior year (outside of the regular school day) will help prepare students for a successful internship experience. Additionally, during their senior year, students must meet during lunch once a week with the Val Tech Coordinator in order to prepare for their final presentation.

Students learn how to complete an electronic portfolio while enrolled in Computer Technology. See the Val Tech Internship Program (V-TIP) book for specifics.

What other requirements must Val Tech students meet?
Tech students must meet all district graduation requirements. Students pursuing a tech diploma can also fulfill both University of California and California State University entrance requirements. The Class of 2006 was the first class eligible for a tech diploma.

What must students do to successfully complete the Val Tech Program?

- Complete 240 credits with an overall unweighted GPA of 2.5 or better in academic courses (Students whose cumulative GPA fall below a 2.0 at the end of any semester will be placed on probation for one semester. They must raise their cumulative GPA to at least 2.0, or they will be dropped from the Val Tech Program.) Students who are dropped from the program and do not reside in the Valencia High School attendance area may be required to transfer to their home school.

- Complete 50 credits in technology pathway electives with a cumulative GPA of 3.0 or better in those courses

- Attend the electronic portfolio and internship seminar during the spring of their junior year (The Val Tech Coordinator and/or the Director of Valencia Academy must approve the planned internship.)
• Complete the 150-hour internship which will culminate in a research project, a reflective essay, and an oral presentation before an interview panel comprised of PYLUSD personnel and community members.

• Attend all mandatory lunchtime meetings (typically held each Wednesday) during the senior year. These meetings will help prepare students for each of the Val Tech requirements (oral presentation, research project, reflective essay, and electronic portfolio).

• Develop an electronic portfolio.

• Meet all district graduation requirements.

• Earn acceptable citizenship grades reflecting good behavior. (Receipt of an unsatisfactory grade will result in student being put on probation. Two consecutive unsatisfactory grades may result in a student being dropped from the program. Students who are dropped from the program and do not reside in the Valencia High School attendance area may be required to transfer to their home school.)

**What are the application criteria for Val Tech?**

- Complete and submit application. School counselors will provide validation of:
  - A grade of B or better in Algebra 1 (first and second quarters)
  - For 1st and 2nd quarters a grade of B in GATE or Honors Language Arts **OR** grade of A in regular Language Arts **INCLUDING** English/Language Arts CST scores at or above 370
- Provide two letters of recommendation from middle-school core teachers

**What are the benefits of a Val Tech high-school education?**

In summary, the benefit of a Val Tech high-school education is a Tech Diploma which provides the student with the opportunity to acquire high-level technology skills, prepare for high-level college and university courses, prepare for specialized technology certificate programs, and sharpen skills and deepen understanding of technology.
VAL TECH TECHNOLOGY PATHWAYS

**Computer Technology 1A/1B**
(Entry-level Requirement)

**ARTS & COMMUNICATION**
- Electronic Art/Design*
- Advanced Electronic Art/Design*
- Intro to Web Page Design*
- Advanced Web Page Design*
- Journalism
- Publications/Newspaper
- Publications/Yearbook
- Creative Writing/Keystones
- Media Productions A/B
- Video Production
- Photography A/B
- AP Photography
- Internship (Required)

**BUSINESS & COMPUTER SCIENCE**
- Accounting
- Computerized Accounting
- Intro to Web Page Design*
- Advanced Web Page Design*
- Marketing*
- Business Law*
- Trig/Math Analysis-Honors
- IB Math-Standard Level
- IB Math-Higher Level (Y1/Y2)
- AP Statistics
- AP Calculus AB/BC
- Internship (Required)

**SCIENCE & TECHNOLOGY**
(Engineering)
- Intro to Web Page Design*
- Advanced Web Page Design*
- Computer Networking 1-2
- Computer Networking 3-4**
- AP Computer Science A
- Advanced Computer Science AB
- Computer Programming—C++
- IB Computer Science SL
- IB Computer Science HL (Y1/Y2)
- Internship (Required)
  ** 1-4 required for Cisco Certification
- Pre-Engineering Technology A/B
- Robotics & Advanced Robotics
- Computer Maintenance*
- Computer Networking 1-2/3-4**
- Physics or AP Physics
- Trig/Math Analysis-Honors
- IB Math-Standard Level
- IB Math-Higher Level (Y1/Y2)
- AP Statistics
- AP Calculus AB/BC
- Internship (Required)
  ** 1-4 required for Cisco Certification

**INTERNSHIP ORIENTATION SEMINAR REQUIRED DURING THE JUNIOR YEAR**
(A one-time hour-long meeting)
Plus 3 to 5 lunchtime meetings held in late May/early June (mandatory)

150-HOUR INTERNSHIP (INCLUDING AN ORAL PRESENTATION, A RESEARCH PROJECT, A REFLECTIVE ESSAY, AND AN ELECTRONIC PORTFOLIO)
In addition, mandatory lunchtime meetings will be held each Wednesday. These meetings will help prepare students for each of the above Val Tech requirements (Oral Presentation, Research Project, Reflective Essay, and Electronic Portfolio)

* Semester Class
# Pathways and Selected Courses

## VAL TECH ELECTIVE COURSES BY GRADE LEVEL

### Arts and Communication
- Electronic Art/Design*
- Advanced Electronic Art/Design*
- Intro to Web Page Design*
- Advanced Web Page Design*
- Journalism
- Publications/Newspaper
- Publications/Yearbook
- Creative Writing/Keystones
- Media Productions A/B
- Video Production
- Photography A/B
- AP Photography
- Internship (Required)

### Business
- Accounting
- Computerized Accounting
- Intro to Web Page Design*
- Advanced Web Page Design*
- Marketing*
- Business Law*
- Trig/Math Analysis-Honors
- IB Math-Standard Level
- IB Math-Higher Level (Y1/Y2)
- AP Statistics
- AP Calculus AB/BC
- Internship (Required)
- Internship (Required)

### Computer Science
- Intro to Web Page Design*
- Advanced Web Page Design*
- Computer Networking 1-2
- Computer Networking 3-4**
- AP Computer Science A
- Advanced Computer Science AB Computer Programming—C++
- IB Computer Science SL
- IB Computer Science HL (Y1/Y2)
- Internship (Required)
- ** 1-4 required for Cisco Certification

### Science & Technology (Engineering)
- Pre-Engineering Technology A/B
- Robotics & Advanced Robotics
- Computer Maintenance*
- Computer Networking 1-2/3-4**
- Physics or AP Physics
- Trig/Math Analysis-Honors
- IB Math-Standard Level
- IB Math-Higher Level (Y1/Y2)
- AP Statistics
- AP Calculus AB/BC
- Internship (Required)
- ** 1-4 required for Cisco Certification
<table>
<thead>
<tr>
<th>10th Grade Electives (These classes can be taken any year)</th>
<th>11th Grade Electives 10th-Grade Electives Plus:</th>
<th>12th Grade Electives 10th-, and 11th-Grade Electives Plus:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arts &amp; Communication</strong></td>
<td><strong>Arts &amp; Communication</strong></td>
<td><strong>Arts &amp; Communication</strong></td>
</tr>
<tr>
<td>• Electronic Art/Design</td>
<td>• Publications/Newspaper</td>
<td>• A/P Photography</td>
</tr>
<tr>
<td>• Adv. Electronic Art/Design</td>
<td>• Publications/Yearbook</td>
<td></td>
</tr>
<tr>
<td>• Intro to Web Page Design</td>
<td>• Creative Writing/Keystones</td>
<td></td>
</tr>
<tr>
<td>• Adv. Web Page Design</td>
<td>• Advanced Photography</td>
<td></td>
</tr>
<tr>
<td>• Journalism</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Business</strong></td>
<td><strong>Business</strong></td>
<td><strong>Business</strong></td>
</tr>
<tr>
<td>• Intro Web Page Design</td>
<td>• Computerized Accounting</td>
<td>• AP Calculus BC</td>
</tr>
<tr>
<td>• Adv. Web Page Design</td>
<td>• AP Calculus AB</td>
<td>• IB Math-Higher Level (Y1/Y2)</td>
</tr>
<tr>
<td>• Accounting</td>
<td>• IB Math-Standard Level</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• IB Math-Higher Level (Y1/Y2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Computer Science</strong></td>
<td><strong>Computer Science</strong></td>
<td><strong>Computer Science</strong></td>
</tr>
<tr>
<td>• Intro Web Page Design</td>
<td>• AP Computer Science AB</td>
<td>• IB Computer Science HL (Y1/Y2)</td>
</tr>
<tr>
<td>• Adv. Web Page Design</td>
<td>• IB Computer Science SL</td>
<td>• Computer Programming—C++</td>
</tr>
<tr>
<td>• AP Computer Science A</td>
<td>• Computer Networking 3-4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Intermediate Comp. Sci.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Science &amp; Technology</strong></td>
<td><strong>Science &amp; Technology</strong></td>
<td><strong>Science &amp; Technology</strong></td>
</tr>
<tr>
<td>• Pre-Eng Tech A/B</td>
<td>• Robotics</td>
<td>• Advanced Robotics</td>
</tr>
<tr>
<td>• Computer Maintenance</td>
<td>• Computer Networking 3-4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Physics or AP Physics</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 12TH Grade Requirement: Internship, Presentation, Essay, and Electronic Portfolio |
## PYLUSD Graduation Requirements

<table>
<thead>
<tr>
<th>9th-Grade</th>
<th>10th-Grade</th>
<th>11th-Grade</th>
<th>12th-Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Graduation Requirements:</strong></td>
<td><strong>Graduation Requirements:</strong></td>
<td><strong>Graduation Requirements:</strong></td>
<td><strong>Graduation Requirements:</strong></td>
</tr>
<tr>
<td>- Language Arts</td>
<td>- Language Arts</td>
<td>- Language Arts</td>
<td>- Language Arts</td>
</tr>
<tr>
<td>- Math</td>
<td>- Math</td>
<td>- US History</td>
<td>- Government</td>
</tr>
<tr>
<td>- PE</td>
<td>- PE</td>
<td>- Science</td>
<td>- Economics</td>
</tr>
<tr>
<td>- Science</td>
<td>- Science</td>
<td>- Foreign Language</td>
<td>- Fine Arts</td>
</tr>
<tr>
<td>- Foreign Language or Fine Arts</td>
<td>- World History</td>
<td>- Foreign Language (necessary for 4-year college-bound students)</td>
<td></td>
</tr>
<tr>
<td>- ASCP/ Health</td>
<td>- Foreign Language</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Val Tech Requirements:**

- Computer Technology 1A/1B

**Val Tech Requirements:**

- Elective from pathway

**Val Tech Requirements:**

- Pre-Internship meeting
- Elective(s) from pathway

**Val Tech Requirements:**

- 150-hour Internship (V-TIP)
- Research project (Completed in LA-4)
- Reflective Essay
- Presentation (based on internship)
- Electronic portfolio
- Electives from pathway

## Val Tech Requirements by Grade Level

<table>
<thead>
<tr>
<th>9th Grade</th>
<th>10th Grade</th>
<th>11th Grade</th>
<th>12th Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Technology 1A/1B</td>
<td>Elective from prescribed pathway (Some sophomore course requirements will be offered zero period and/or seventh period to facilitate pathway continuity.)</td>
<td>Up to four (4) semesters of Tech classes from prescribed pathways.</td>
<td>Up to four (4) semesters of Tech classes, including a 150-hour, ten-credit internship culminating in an presentation, a research project, reflective essay and an electronic portfolio.</td>
</tr>
<tr>
<td>Health* (zero period or summer school)</td>
<td></td>
<td>Internship meeting—required (Orientation to V-TIP Val Tech Internship Program)</td>
<td></td>
</tr>
<tr>
<td>Academic Studies &amp; Career Planning (ASCP)* zero period, summer school, or Directed Study</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### SAMPLE VAL TECH TECHNOLOGY PATHWAY SEQUENCE OF COURSES

<table>
<thead>
<tr>
<th>Arts and Communication</th>
<th>Computer Networking</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course 1:</strong> Computer Technology 1A/1B</td>
<td><strong>Course 1:</strong> Computer Technology 1A/1B</td>
</tr>
<tr>
<td><strong>Course 2:</strong> Web Page Design</td>
<td><strong>Course 2:</strong> Computer Maintenance</td>
</tr>
<tr>
<td><strong>Course 3:</strong> Publication/Yearbook/Newspaper*</td>
<td><strong>Course 3:</strong> Computer Networking 1-2</td>
</tr>
<tr>
<td><strong>Course 4:</strong> <em>Keystones</em></td>
<td><strong>Course 4:</strong> Computer Networking 3-4</td>
</tr>
<tr>
<td><strong>Course 5:</strong> V-TIP Internship</td>
<td><strong>Course 5:</strong> V-TIP Internship</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electronic Art/Design/Media Production</th>
<th>Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course 1:</strong> Computer Technology 1A/1B</td>
<td><strong>Course 1:</strong> Computer Technology 1A/1B</td>
</tr>
<tr>
<td><strong>Course 2:</strong> Electronic Art/Advanced Electronic Art</td>
<td><strong>Course 2:</strong> Pre-Engineering A/B*</td>
</tr>
<tr>
<td><strong>Course 3:</strong> Video Production <em>(Tiger Tube)</em></td>
<td><strong>Course 3:</strong> Robotics or AP Statistics*</td>
</tr>
<tr>
<td><strong>Course 4:</strong> Media Productions* (Film Making)</td>
<td><strong>Course 4:</strong> Physics* or AP Physics*</td>
</tr>
<tr>
<td><strong>Course 5:</strong> V-TIP Internship</td>
<td><strong>Course 5:</strong> V-TIP Internship</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Photography</th>
<th>CAD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course 1:</strong> Computer Technology 1A/1B</td>
<td><strong>Course 1:</strong> Computer Technology 1A/1B</td>
</tr>
<tr>
<td><strong>Course 2:</strong> Electronic Art/Design</td>
<td><strong>Course 2:</strong> Pre-Engineering A/B*</td>
</tr>
<tr>
<td><strong>Course 3:</strong> Web Page Design</td>
<td><strong>Course 3:</strong> CAD I</td>
</tr>
<tr>
<td><strong>Course 4:</strong> Photography A/B*</td>
<td><strong>Course 4:</strong> CAD II</td>
</tr>
<tr>
<td><strong>Course 5:</strong> Advanced Photo or AP Photo*</td>
<td><strong>Course 5:</strong> CAD III</td>
</tr>
<tr>
<td><strong>Course 6:</strong> V-TIP Internship</td>
<td><strong>Course 6:</strong> V-TIP Internship</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accounting/Business</th>
<th>Web Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course 1:</strong> Computer Technology 1A/1B</td>
<td><strong>Course 1:</strong> Computer Technology 1A/1B</td>
</tr>
<tr>
<td><strong>Course 2:</strong> Accounting</td>
<td><strong>Course 2:</strong> Electronic Art/Advanced Electronic Art</td>
</tr>
<tr>
<td><strong>Course 3:</strong> Computerized Accounting 2</td>
<td><strong>Course 3:</strong> Web Page Design</td>
</tr>
<tr>
<td><strong>Course 4:</strong> AP Statistics*</td>
<td><strong>Course 4:</strong> Advanced Web Page Design</td>
</tr>
<tr>
<td><strong>Course 5:</strong> V-TIP Internship</td>
<td><strong>Course 5:</strong> V-TIP Internship</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Computer Science</th>
<th>UC Approved Val Tech Classes*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course 1:</strong> Computer Technology 1A/1B</td>
<td>(Note: These courses are not an official sequence for a Val Tech Certificate.)</td>
</tr>
<tr>
<td><strong>Course 2:</strong> AP Computer Science A*</td>
<td>· <em>Journalism</em></td>
</tr>
<tr>
<td><strong>Course 3:</strong> Computer Programming—C++</td>
<td>· <em>Photography A/B or AP</em></td>
</tr>
<tr>
<td><strong>Course 4:</strong> IB Computer Science SL</td>
<td>· <em>Animation</em></td>
</tr>
<tr>
<td><strong>Course 5:</strong> IB Computer Science HL (Y1/Y2)</td>
<td>· <em>Media Productions</em></td>
</tr>
<tr>
<td><strong>Course 6:</strong> V-TIP Internship</td>
<td>· <em>AP Statistics</em></td>
</tr>
<tr>
<td><strong>Course 4:</strong> Physics or AP Physics</td>
<td>· <em>Comp. Sci. A &amp; A/B</em></td>
</tr>
<tr>
<td><strong>Course 5:</strong> IB Math</td>
<td>· <em>IB Comp. Sci.</em></td>
</tr>
<tr>
<td><strong>Course 6:</strong> IB Math (HL) Y1/Y2</td>
<td>· <em>AP Calculus</em></td>
</tr>
<tr>
<td><strong>Course 7:</strong> Comp. Prog. with JAVA</td>
<td>· <em>Comp. Prog. with JAVA</em></td>
</tr>
<tr>
<td><strong>Course 8:</strong> Trig/Math Analysis—H</td>
<td>· <em>IB Math</em></td>
</tr>
<tr>
<td><strong>Course 9:</strong> Pre-Engineering</td>
<td>· <em>IB Math (HL) Y1/Y2</em></td>
</tr>
</tbody>
</table>

*University of California (UC) Approved Course

Val Tech classes are scheduled according to the school's needs and therefore are not necessarily offered each semester. Contact Mr. Bell, Mr. Stanley, or Mr. Guest for specifics.
### 9th Grade
- Language Arts 1
- Biology
- Geometry or Algebra 2
- Foreign Language 1 or 2
- **VT Computer Technology 1A/1B**
- PE/Athletics/Band
- **Zero Period Health, ASCP Directed Study**

Summer after 9th Grade:
- VPA Elective for university preparation

### 10th Grade
- Language Arts 2
- World History
- Algebra 2 or Math Analysis
- Foreign Language
- **Val Tech Elective**
- PE/Athletics/Band
- Chemistry

Summer after 10th Grade:

### 11th Grade
- Language Arts 3
- U.S. History
- Math Analysis
- Physics
- Foreign Language 3 or AP
- **Val Tech Elective**
- **Internship Seminar meeting**—a 1-hour meeting after school—usually in early February.

Summer after 11th Grade:

### 12th Grade
- Language Arts 4
- Government/Economics
- Math
- Science or Visual and Performing Arts
- **Val Tech Elective**
- **Val Tech Internship** (This may be taken outside the traditional school day)

### Notes
- This is a sample four-year plan. Each student’s may be slightly different. You will have opportunities throughout the next four years to discuss this plan with Mr. Stanley or Mr. Guest and modify it.
# Sample Val Tech Academy “U.C.” Four-Year Plan

## 9th Grade
- Language Arts 1 Honors
- Biology Honors
- Geometry or Algebra 2
- Foreign Language 1 or 2
- **VT Computer Technology 1A/1B**
- PE/Athletics/Band
- **Zero Period Health, ASCP Directed Study**

Summer after 9th
- Visual Performing Arts Elective for college

## 10th Grade
- Language Arts 2 Honors
- A.P. European History
- Algebra 2 or Math Analysis
- Foreign Language 2 or 3
- **A.P. Computer Science**
- PE/Athletics/Band
- **Journalism/Pre-Engineering**

Summer after 10th
- 

## 11th Grade
- A.P. English Language
- A.P. U.S. History
- Math Analysis or A.P. Calculus AB
- Chemistry Honors
- Foreign Language 3 or A.P.
- **IB Computer Science**
- **Journalism**
- **Internship Seminar**—a 1-hour meeting after school—usually in early February.

Summer after 11th
- 

## 12th Grade
- A.P. English Literature
- A.P. Government/Economics
- **A.P. Statistics**
- A.P. Foreign Language
- **A.P. Physics** or (Visual Performing Arts Elective)
- **Photography**
- **Val Tech Internship / Journalism** (The Internship may be taken outside the traditional school day)

Note: This is a sample four-year plan. Each student's may be slightly different. You will have opportunities throughout the next four years to discuss this plan with Mr. Stanley or Mr. Guest and modify it.
Appendix

VAL TECH COURSE DESCRIPTIONS

9th Grade Required Course for All Pathways

<table>
<thead>
<tr>
<th>COURSE TITLE: COMPUTER TECHNOLOGY 1A</th>
<th>Grades: 9-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length: One Semester</td>
<td>Prerequisite: None</td>
</tr>
<tr>
<td>Computer Technology is an introductory computer laboratory course. Students will use the computer for a variety of software applications and operations, to obtain additional computer information, to see computer trends, to research careers, and to explore further educational opportunities. Computer Technology is recommended for students who are preparing for college and/or a career. This class is required of all Val Tech students.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COURSE TITLE: COMPUTER TECHNOLOGY 1B</th>
<th>Grades: 9-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length: One Semester</td>
<td>Prerequisite: Computer Technology 1A</td>
</tr>
<tr>
<td>Students will build and expand on the technology skills learned in the first semester of Computer Technology. Students will select, combine, and apply appropriate software needed to function effectively in our rapidly changing technological, global society. Students will focus on advanced technology skills vital to business and industry, use technology to analyze and manage information, and integrate software applications. Students learn how to complete an electronic portfolio in Computer Technology 1B. All Val Tech students will keep all appropriate work in their electronic portfolio. Students who are part of the Val Tech Program must keep their electronic portfolio current while enrolled at Valencia High School. This class is required for all Val Tech students.</td>
<td></td>
</tr>
</tbody>
</table>

VAL TECH COURSE DESCRIPTIONS

IN

ARTS AND COMMUNICATION

<table>
<thead>
<tr>
<th>COURSE TITLE: PUBLICATIONS/NEWSPAPER</th>
<th>Grades: 10-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length: One Year</td>
<td>Prerequisite: Journalism Instructor Approval</td>
</tr>
<tr>
<td>This course provides an in-depth, hands-on study of journalism techniques, editing skills, and publishing experiences. Correct grammatical usage, vocabulary building, punctuation, capitalization and proper journalism style are stressed. Experiences in writing leads, news, features (informative, first person, brights, personality sketch, reviews), editorials (explanatory, commendatory, critical), newspaper design, headline writing, photo cropping, caption writing, ad sales, and issue planning will be provided. Students are held accountable for reading selected literature and the analysis of that literature. This course may be repeated for credit.</td>
<td></td>
</tr>
</tbody>
</table>

Note: Much of the material found in these course descriptions was taken from the PYLUSD High School Course Description book. All courses are subject to revision, and the springtime needs assessment survey determines which courses are actually taught each semester. Contact Mr. Bell, Mr. Guest, or Mr. Stanley with specific questions.
COURSE TITLE: PUBLICATIONS/ANNUAL (YEARBOOK)  Grades: 9-12
Length: One Year  Prerequisite: Teacher Recommendation
This elective course provides an in-depth study of student publishing through actual experience in publishing the school yearbook. It provides the students with the opportunity to assume responsibility for all aspects of the publication of a yearbook, including planning, developing a budget, cost analysis, financing, sales (advertising and product), planning the book's content, design, theme development, headline writing, copy writing, caption writing, and photography. This course may be repeated for credit.

COURSE TITLE: CREATIVE WRITING /KEYSTONES  Grades: 9-12
Length: One Semester  Prerequisite: None
Students in Keystones are responsible for reading, editing, and inputting poems into the computer in preparation for publishing. Editors must also add graphics to the poems and short stories to enhance the written work. Editors will also create an index for the magazine. Editors will visit Language Arts classes to promote the magazine and to encourage students to submit their short stories, poems, anecdotes, and song lyrics for possible publication. Computer skills are a prerequisite as well as diligence and a positive work attitude. Only two students are selected to be Keystones editors per publication.

COURSE TITLE: TECHNICAL WRITING/LA4  Grades: 12
Length: One Year  Prerequisite: None
This course fulfills all UC/CSU admission requirements. Students will complete all required LA4 coursework, but students will be given technical writing assignments whenever possible.

COURSE TITLE: PHOTOGRAPHY A  Grades: 9-12
Length: One Semester  Prerequisite: None
This elective course is designed to introduce the student to the processes and materials needed to produce high-quality black-and-white photographs. Instruction includes technical aspects of the camera, film types, processing negatives, and enlarging prints. Elements and principles of art are also considered.

COURSE TITLE: PHOTOGRAPHY B  Grades: 9-12
Length: One Semester  Prerequisite: Photography A
This elective course is designed to provide photography students with further information regarding a variety of techniques and materials related to the photographic process. Major instruction includes technical considerations, practical skills, and lab techniques necessary to prepare the student for employment in the field of photography. This single-semester course may be repeated a second time for credit.

COURSE TITLE: ADVANCED PHOTOGRAPHY  Grades: 9-12
Length: One Year  Prerequisite: Photography A/B
This elective course is designed to provide photography students with information and skills regarding a variety of techniques and materials related to the photographic process. The aim of the course is to examine and understand the basic principles of the medium and to explore processes and techniques that will emphasize the distinctive aspects of the students' own photographic sense of communication. Emphasis will be place on history, culture, social issues, and aesthetic concerns within the visual arts.

Note: Much of the material found in these course descriptions was taken from the PYLUSD High School Course Description book. All courses are subject to revision, and the springtime needs assessment survey determines which courses are actually taught each semester. Contact Mr. Bell, Mr. Guest, or Mr. Stanley with specific questions.
COURSE TITLE: AP PHOTOGRAPHY  
Grades: 11-12  
Length: One Year  
Prerequisite: Photography 1  
This elective course is designed to provide AP photography students with the skills needed to create and submit the AP Studio Art 2D Portfolio. The portfolio covers 24 exceptional pieces of artwork that are submitted to the College Board to allow students college credit for the class. The course is designed to be equivalent to an entry level college Photography course, and covers the use of technology and equipment used in both a traditional and digital environment, as well as more advanced historical and cultural subject matter. Students need to have completed both the prerequisite and summer coursework prior to the beginning of the class.

COURSE TITLE: ELECTRONIC ART/DESIGN  
Grades: 9-12  
Length: One Semester  
Prerequisite: None  
This elective course is designed to introduce the student to the basic concepts common to the field of electronic art and design. This course explores electronic media as a means of creative visual communication. It develops an understanding that art principles and technical skills are necessary for effective communication via electronic art.

COURSE TITLE: ADVANCED ELECTRONIC ART & DESIGN  
Grades: 9-12  
Length: One Semester  
Prerequisite: None  
This elective course will allow students to further explore key concepts in the field of electronic art and design. Students will also be introduced to advanced principles of electronic media manipulation. They will examine electronic medium as an avenue for creative visual communication. Students learn how to apply art principles and their technical skills to communicate effectively in the medium of electronic art.

COURSE TITLE: INTRODUCTION TO ANIMATION  
Grades: 9-12  
Length: One Semester  
Prerequisite: Art Fundamentals A  
This course introduces the student to the history and development of animation processes. This course explores a variety of animation techniques including pixilation, cutouts, cartoons, puppets, and computer animation. This course includes the production of animated sequences by the students.

COURSE TITLE: ANIMATION PROJECTS  
Grades: 9-12  
Length: One Semester  
Prerequisite: Introduction to Animation  
This elective course is designed to further instruct students in a variety of animation techniques such as stop frame, pixilation, claymation, and 2D and 3D computer animation. Students produce animated sequences.

COURSE TITLE: MEDIA PRODUCTIONS  
Grades: 9-12  
Length: One Year  
Prerequisite: None  
This course introduces students to the art and language of film (film making). Students will learn film terminology and use it in oral and written criticism of films studied in and out of class. Students will learn how to analyze a film, identifying mise-en-scene, narrative structure, genre conventions, and subtext. Students will use this knowledge as a springboard and to guide them in creating their own films. Students will learn pre-production, production, and post-production techniques of filmmaking using digital video cameras and computer editing software designed for media productions.

Note: Much of the material found in these course descriptions was taken from the PYLUSD High School Course Description book. All courses are subject to revision, and the springtime needs assessment survey determines which courses are actually taught each semester. Contact Mr. Bell, Mr. Guest, or Mr. Stanley with specific questions.
COURSE TITLE: Video Production I & II
Grades: 9-12
Length: One Year
Prerequisite: None
This course a yearlong elective course—known on campus as “TigerTube”. It is a project-based curriculum that develops career and communication skills in digital video production. This course is designed to introduce students to the techniques and skills used widely in the video production and digital arts communities with a focus on four key skill areas: 1) project management and collaboration, 2) design, 3) research and communication, and 4) professional video production. Students engage in, capturing and editing video and audio, and finalizing or publishing content for DVD and the Internet.

VAL TECH COURSE DESCRIPTIONS
IN
BUSINESS & COMPUTER SCIENCE

BUSINESS

COURSE TITLE: ACCOUNTING 1
Grades: 10-12
Length: One Year
Prerequisite: Algebra 1 with a C or better or teacher recommendation
This course covers a broad range of accounting principles and includes instruction in special journals, posting, trial balancing, work sheets, financial statements, adjustments, and closing ledgers. Students are introduced to computerized accounting. This course is highly recommended for students who are training for various business occupations as well as students planning on becoming accounting or business majors at the college level. (Satisfies one year of mathematics or elective requirement.)

COURSE TITLE: COMPUTERIZED ACCOUNTING 2
Grades: 11-12
Length: One Year
Prerequisite: Accounting 1
This course is a continuation of Accounting 1. It gives students hands-on experience in using the computer to apply accounting concepts. This course provides a realistic, integrated approach covering the major components of an accounting cycle. This course is strongly recommended for students who are training for a business or accounting-oriented occupation as well as students planning on becoming accounting or business majors at the college level.

COURSE TITLE: BUSINESS FUNDAMENTALS
Grades: 9-12
Length: One Semester
Prerequisite: Keyboarding
This broad-based course facilitates the integration of academic and technical knowledge necessary for the high-performance workplace. Students will use appropriate business software, equipment, and materials to acquire the skills, knowledge, and ability needed to succeed. Business Technology Core standards include business communications, business environment, career preparation, job acquisition, economics of business, financial concepts, functions of business, human resources development, leadership development, and technology.

Note: Much of the material found in these course descriptions was taken from the PYLUSD High School Course Description book. All courses are subject to revision, and the springtime needs assessment survey determines which courses are actually taught each semester. Contact Mr. Bell, Mr. Guest, or Mr. Stanley with specific questions.
BUSINESS/MATHEMATICS

COURSE TITLE: TRIGONOMETRY AND MATH ANALYSIS--HONORS Grades: 10-12
Length: One Year Prerequisite: Honors Placement Criteria
This course includes the following topics commonly found in pre-calculus mathematics: trigonometry; sets and logical statements; ordered fields, functions, polynomial functions; logarithmic and trigonometric functions; complex numbers, plane analytic geometry, matrices; vectors, induction, and the binomial function; permutations; combinations, and probability; sequences series and limits. This course reviews and unifies mathematical experience and acts as a transition from the mathematics commonly associated with the secondary schools to higher mathematics.

COURSE TITLE: IB MATH STANDARD LEVEL Grades: 10-12
Length: One Year Prerequisite: Placement Recommendation
Mathematical Methods is for students who anticipate the need for a sound mathematical background in preparation for their future studies. This course consists of the study of six core topics: Numbers and Algebra, Functions and Equations, Circular Functions and Trigonometry, Vector Geometry, Statistics and Probability, and Calculus. Students are also required to study one of the following options: Statistical Methods, Further Calculus, or Further Geometry. Students in Mathematical Methods are expected to already possess knowledge of basic concepts and to be equipped with the skills needed to apply simple mathematical techniques. This broad range of mathematical topics makes it a demanding course.

COURSE TITLE: IB MATH HIGHER LEVEL (Y1/Y2) Grades: 11-12
Length: One Year Prerequisite: Placement Recommendation
Mathematics HL is a two-year course designed for the student with a strong mathematics background, good technical and analytical skills, and a desire to learn more about mathematics for the enjoyment and challenge. Year 1 (Y1) is Trigonometry/Math Analysis—Honors and Year 2 (Y2) is AP Calculus BC.

COURSE TITLE: AP STATISTICS Grades: 10-12
Length: One Year Prerequisite: Placement Recommendation
This course is equivalent to a one-semester, introductory, non-calculus-based college course in statistics. Students are introduced to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Students are exposed to four broad conceptual themes: exploring data, planning a study, anticipating patterns, and statistical inference.

COURSE TITLE: AP CALCULUS (AB AND BC) Grades: 11-12
Length: One Year Prerequisite: Placement Recommendation
This course includes finite and infinite limits, continuity; derivatives of algebraic, trigonometric, exponential, and logarithmic functions; definite and indefinite integrals; applications of the integral; sequences, series and convergence.

Note: Much of the material found in these course descriptions was taken from the PYLUSD High School Course Description book. All courses are subject to revision, and the springtime needs assessment survey determines which courses are actually taught each semester. Contact Mr. Bell, Mr. Guest, or Mr. Stanley with specific questions.
COMPUTERS AND COMPUTER SCIENCE

COURSE TITLE: COMPUTER MAINTENANCE  
Grades: 9-12 
Length: One Semester  
Prerequisite: None 
This is a course designed to prepare students to operate, maintain, and repair microcomputer systems. Students receive instruction and hands-on applications in basic electronics and in setting up, troubleshooting, and servicing personal computer systems. Students explore and become familiar with software applications and operating system installation. Integrated throughout the course is additional information on computer trends, careers, problem solving, safety, and other employment skills. The course is open-entry, open-exit, and competency based.

COURSE TITLE: COMPUTER PROGRAMMING WITH JAVA  
Grades: 10-12 
Length: One Semester  
Prerequisite: "C" or better in Geometry and teacher recommendation required. 
JAVA computer programming is designed to enable students to develop skills in writing computer programs in the JAVA language. Topics will include algorithmic solutions of mathematical problems, software development, top-down program design, object-oriented programming, web page design, JAVA classes, objects and methods, JAVA syntax, primitive data types, strings loops, arrays, searching and sorting.

COURSE TITLE: COMPUTER PROGRAMMING WITH VISUAL BASIC  
Grades: 9-12 
Length: One Semester  
Prerequisite: "B" or better in Algebra 1 
Computer Programming with Visual Basic is a yearlong course in the Basic and Visual Basic programming languages. The course is designed to introduce students with sufficient math backgrounds to the fundamentals of computer programming and data manipulation. The course emphasizes top-down programming technique, proper syntax, proper documentation methods, event-oriented programming, graphic user interface design, and "end user" oriented programming.

COURSE TITLE: AP COMPUTER SCIENCE-A  
Grades: 11-12 
Length: One Year  
Prerequisite: Placement Criteria 
Computer Science AP-A, Programming with JAVA, is a yearlong Advanced Placement course. Students will learn to program in JAVA and prepare for the College Board Computer Science "A" test (APCS-A). JAVA is the language used to develop most operating systems and commercial microcomputer software. This challenging class will help students develop the ability to solve problems in logical ways while encouraging creativity. Topics covered will be consistent with the Advanced Placement (AP) Computer Science-A course and include the recommended subset as defined by the most recent edition of the College Board "acorn book." Students will acquire the technical knowledge and skills to write, compile, and execute computer programs. In addition, students will learn the entire process of designing and implementing a computer-based solution to a problem and programming/scientific methodology.

Note: Much of the material found in these course descriptions was taken from the PYLUSD High School Course Description book. All courses are subject to revision, and the springtime needs assessment survey determines which courses are actually taught each semester. Contact Mr. Bell, Mr. Guest, or Mr. Stanley with specific questions.
COURSE TITLE: AP COMPUTER SCIENCE-AB
Grades: 11-12
Length: One Year
Prerequisite: Placement Criteria
AP Computer Science-AB, Programming with JAVA, is a yearlong Advanced Placement course. Students will learn to program in JAVA and may prepare for the College Board Computer Science "AB" test (APCS-AB). JAVA is the language used to develop most operating systems and commercial microcomputer software. This challenging class will help students develop the ability to solve problems in logical ways while encouraging creativity. Topics covered will be consistent with the Advanced Placement (AP) Computer Science-AB course and include the recommended subset as defined by the most recent edition of the College Board "acorn book." Students will acquire the technical knowledge and skills to write, compile, and execute computer programs. In addition, students will learn the entire process of designing and implementing a computer-based solution to a problem and programming/scientific methodology.

COURSE TITLE: IB COMPUTER SCIENCE
Grades: 9-12
Length: One Year
Prerequisite: Placement Criteria
This course is an in-depth problem-solving class using computer science algorithms and methodology. Following the pattern of the software life cycle (analysis, design, construction, testing, and revision), students solve real-world problems. Source code is written using an appropriate high-level computer language (C++). The students are assessed on their ability to think logically to solve problems using acceptable computer science algorithms and solutions that are efficient as well as socially and ethically responsible.

COURSE TITLE: INTRODUCTION TO WEB PAGE DESIGN
Grades: 9-12
Length: One Semester
Prerequisite: Completion of Pre-Algebra Recommended
Introduction to Web Page Design is a semester-long course designed to introduce students to web page design for both the Internet and an in-class Intranet which the students will design. Students will learn the basic of the HTML web design language which will allow them to design web pages. Students will use skills learned in the class environment to update and maintain an actual Internet Web Site. The HTML language is a simple language and is easy for the average student to learn. Upon completion of this course, the average student will be able to design, maintain, upgrade, and modify Internet/Intranet Web type documents. In addition, students will learn fundamental computer programming and operating skills. These skills can then be applied to other, higher-level computer programming courses, other computer-related courses, the school environment, and the workplace.

COURSE TITLE: ADVANCED WEB PAGE DESIGN
Grades: 9-12
Length: One Semester
Prerequisite: Completion of "Introduction to Web Page Design with a Grade of C or better"
Advanced Web Page Design is semester-long course designed for students who have completed Introduction to Web Page Design and wish to learn advanced HTML code and create advanced web pages. Emphasis will be placed on higher-level HTML code structures and long-term projects in web page design. HTML (along with JAVA) are the languages used to produce the web-based documents presently available on the Internet. Upon completion of this course, the average student will be able to design, maintain, upgrade, and modify Internet/Intranet Web type documents. In addition, students will learn fundamental computer programming and operating skills. These skills can then be applied to other, higher-level programming languages, other computer-related courses, the school environment, and the workplace.

Note: Much of the material found in these course descriptions was taken from the PYLUSD High School Course Description book. All courses are subject to revision, and the springtime needs assessment survey determines which courses are actually taught each semester. Contact Mr. Bell, Mr. Guest, or Mr. Stanley with specific questions.
COURSE TITLE: COMPUTER NETWORKING 1 & 2  
Grades: 10-12  
Length: One Year  
Prerequisite: Successful Completion of Algebra 1 or Teacher Recommendation

In this yearlong course students learn computer networking. They acquire knowledge and skills necessary for getting and keeping an entry-level job in the computer networking field. Besides increasing career awareness among students, the course also challenges them to continue gaining networking skills and to learn to make informed decisions about their future education and career path.

COURSE TITLE: COMPUTER NETWORKING 3 & 4  
Grades: 11-12  
Length: One Year  
Prerequisite: Successful Completion of Computer Networking 1 & 2

This is the second of two courses designed to provide students with classroom and laboratory experience in current and emerging networking technology that will empower them to enter employment and/or further education and training in the computer networking field. Content standards are based on a task analysis of current industry/occupational standards. The first half of this course includes switches, Local Area Network (LAN) and Virtual Local Area Network (VLAN) design, configuration, maintenance, internet work packet exchange (IPX), routing and interior gateway routing protocols (IGRP); and network troubleshooting. The second half of the course includes wide area networks (WANs), integrated services data networks (ISDN), point-to-point protocols (PPP), and frame relay design, configuration, and maintenance. Students develop practical experience in skills related to configuring WANs, ISDN, PPP, and frame relay protocols and network troubleshooting. Integrated throughout the course are career preparation standards which include basic academic skills, communications, interpersonal skills, problem solving safety, technology, and other employment skills.

Note: Much of the material found in these course descriptions was taken from the PYLUSD High School Course Description book. All courses are subject to revision, and the springtime needs assessment survey determines which courses are actually taught each semester. Contact Mr. Bell, Mr. Guest, or Mr. Stanley with specific questions.
VAL TECH COURSE DESCRIPTIONS
IN
SCIENCE AND TECHNOLOGY

COURSE TITLE: PRE-ENGINEERING A/B
Grades: 9-10
Length: One Year
Prerequisite: Chair's approval consistent with student’s career pathway

This course is designed to ensure that high-school students learn about the technology that affects their lives. Students learn mathematics, science, communication skills, history, and social science concepts through an activity-oriented approach. They learn to communicate effectively, solve problems, and present oral and written reports. This integrated linkage of technical and academic skills prepares high-school students for enrollment in advanced academic, vocational, and technical courses at all educational levels.

COURSE TITLE: ADVANCED PRE-ENGINEERING
Grades: 10-12
Length: One Semester
Prerequisite: None

This course is designed to build on the skills acquired in Pre-Engineering A and B. Students will specialize in three (3) of the technology labs available with an enhanced 30-hour curriculum, thus totaling 40 hours of instruction in a selected technology. Students learn to apply mathematics, science, communication skills, history, and social science concepts through an activity-oriented approach. They learn to communicate effectively and become independent thinkers and problem solvers. This integrated linkage of technical and academic skills provides entry-level workforce skills and prepares high-school students for enrollment in advanced academic, vocational, and technical courses at all educational levels.

COURSE TITLE: PHYSICS
Grades: 11-12
Length: One Year
Prerequisite: Algebra 2 with a C

This is a college-preparatory course designed to familiarize the students with the physical world around them, as revealed through motion, energy, wave phenomena, light and electricity, and structure of the atom and nucleus. Great emphasis is placed on problem-solving and graphical analysis of data; as such, mastery of physics depends significantly upon the student’s skills in mathematics.

COURSE TITLE: AP PHYSICS
Grades: 11-12
Length: One Year
Prerequisite: Placement Criteria

This is a college-level course equivalent to a one-year non-calculus college physics course. The focus is on topics including mechanics, dynamics, heat, sound and wave theory, electricity and magnetism, light and optics and nuclear physics. Classroom instruction is designed to prepare the student to successfully pass the Advance Placement (AP) Physics B Exam using lectures, audio-visual materials and laboratory experiences. The College Board is designed to prepare students for the AP exams. Environmental science is interdisciplinary; it embraces a wide variety of topics from different areas of study. Several major unifying themes cut across the many topics included in the study of environmental science, and this course seeks to help students appreciate the essential interconnectedness of these disciplines.

Note: Much of the material found in these course descriptions was taken from the PYLUSD High School Course Description book. All courses are subject to revision, and the springtime needs assessment survey determines which courses are actually taught each semester. Contact Mr. Bell, Mr. Guest, or Mr. Stanley with specific questions.
COURSE TITLE: ROBOTICS  
Grades: 10-12  
Length: One Year  
Prerequisite: None  
The objective of this course is to use a hands-on approach to introduce the basic concepts in robotics, focusing on micro controllers, autonomous mobile robots and real world applications. Information presented in class will be linked to lab experiments. Students will work in teams to build and test increasingly more complex LEGO-based mobile robots. Students will apply what they have learned through a series of robot contests. The course will use Parallax stamp micro controllers and Lego systems to illustrate the historical development of robotics, integrating sensors, electric circuits, gears and motors. More importantly, students will use knowledge learned in their core classes to problem solve. Students will use writing skills to communicate with the robots, math analysis to control movement, and their science background to design and measure variables such as acceleration and torque.

COURSE TITLE: INTRODUCTION TO COMPUTER-AIDED DESIGN (CAD I)  
Grades: 9-12  
Length: One Year  
Prerequisite: None  
This course teaches basics drafting skills and their application on the computer with emphasis on engineering drawing and architectural drawings. The architectural portion of the course includes designing and drawing residential homes and small commercial buildings. The engineering portion of the course includes descriptive geometry, technical illustration, assembly drawings, cross sections, and orthographic projections. Introduction also includes research into CAD (computer-assisted drafting) careers and a broad incorporation of the design process. The emphasis in the introduction course is to familiarize the students with the CAD interface, reading blueprints, and drawing descriptive two-dimensional drawings that are technically correct.

COURSE TITLE: ARCHITECTURAL/ENGINEERING CAD (CAD-II)  
Grades: 10-12  
Length: One Year  
Prerequisite: CAD I  
Teaches intermediate drafting skills and their application on the computer with emphasis in architectural drawings and some engineering drawings. This course includes designing and drawing small commercial and residential buildings in 2 dimensional and 3 dimensional views. This will also give each student exposure to unique real-world disciplines. The emphasis in the intermediate course is to become more technically proficient with the interface using the command line entry method, draw descriptive 1, 2, and 3 dimensional drawings that are technically correct, more advanced CAD interfaces and plotting (a.k.a. printing) to scale.

COURSE TITLE: ADVANCED CAD (CAD-III)  
Grades: 11-12  
Length: One Year  
Prerequisite: CAD-II  
Teaches advanced drafting skills and their application on the computer with emphasis in engineering drawings, architectural drawings, and real world group projects. Additionally, 4 “mini-units” using “Inventor Series”, “VIZ”, “Mechanical Desktop”, and “Intermediate AutoCAD” will give each student exposure to unique, professional disciplines. The emphasis in the advanced course is to become more technically proficient with the interface using keyboard shortcuts, toolbars, and the command line entry method. Also, being able to draw descriptive 1-, 2-, and 3-dimensional drawings that are technically correct, advanced CAD interfaces, plotting to scale, and manufacturing requirements.

Note: Much of the material found in these course descriptions was taken from the PYLUSD High School Course Description book. All courses are subject to revision, and the springtime needs assessment survey determines which courses are actually taught each semester. Contact Mr. Bell, Mr. Guest, or Mr. Stanley with specific questions.
### VAL TECH REQUIRED COURSE

**12th Grade Required Course for All Pathways.**

All Val Tech Students Must Complete

<table>
<thead>
<tr>
<th>COURSE TITLE: VAL TECH INTERNSHIP (V-TIP)</th>
<th>Grades: 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length: One Year</td>
<td>Prerequisite: None</td>
</tr>
</tbody>
</table>

Students will work with an approved organization to arrange and complete a technology-related internship program in an area of interest to them. Students can schedule this 150-hour, ten-credit internship for the summer between their junior and senior years or during their senior year. V-TIP also includes a research project (which is completed in the Val Tech LA-4 class, or independently in either a regular LA-4 class or an IB/AP-LA-4 class), a reflective essay, and an oral presentation. Students working toward a tech diploma will also construct an electronic portfolio. Students must attend an orientation seminar in the spring semester (usually in early February) of their junior year and 3 to 5 lunchtime meetings in May/June so that they can successfully complete their internship and electronic portfolio. Additionally, during their senior year, students must meet during lunch once a week with the Val Tech Coordinator in order to prepare for their final presentation. After successful completion of all the V-TIP requirements, the entire 10-credits will be earned and recorded on the student’s final senior report card (June of their senior year).

---

Note: Much of the material found in these course descriptions was taken from the PYLUSD High School Course Description book. All courses are subject to revision, and the springtime needs assessment survey determines which courses are actually taught each semester. Contact Mr. Bell, Mr. Guest, or Mr. Stanley with specific questions.
Thanks for taking the time to learn more about the Val Tech Program.

Every effort has been taken to provide accurate and consistent information in this manual. If you have any questions, or for more information, please visit our website at www.vhstigers.org or you may contact us:

Mr. Jim Bell, Principal
Director of Valencia Academy
(714) 996-4970 x 10001
jbell@pylusd.org

Mr. Joey Davis
Assistant Principal of Curriculum
(714) 996-4970 x 10004
jodavis@pylusd.org

Mr. Mike Guest
Val Tech Coordinator
(714) 996-4970 x 10045
mguest@pylusd.org

Mr. Mark Stanley
Valencia Academy Counselor
(714) 996-4970 x 10024
mstanley@pylusd.org

Special thanks to:
Mrs. Carol Holst, Val Tech Founder
Mr. Wendell Bainter, Val Tech Director Emeritus