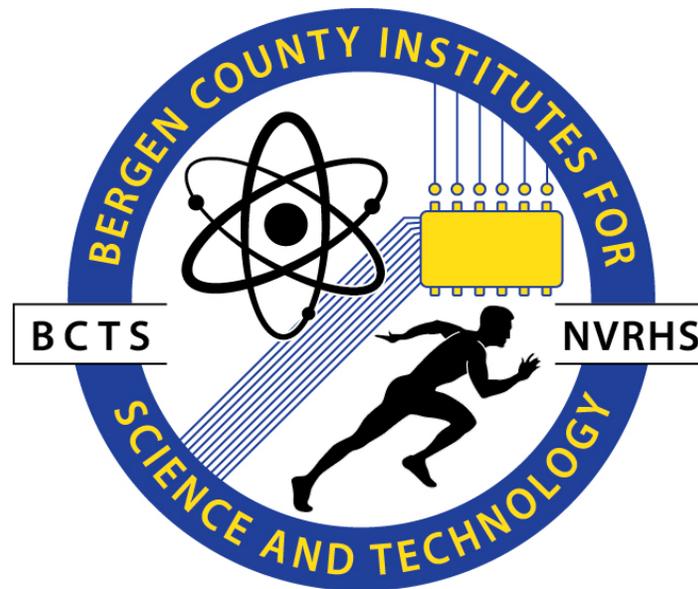


**BERGEN COUNTY TECHNICAL SCHOOLS / NORTHERN VALLEY REGIONAL  
HIGH SCHOOL**

# **BERGEN COUNTY INSTITUTES FOR SCIENCE & TECHNOLOGY**

*Institute for Interactive Design Technology / Institute for Sports Medicine & Exercise Science*

**@ Northern Valley Regional High School—Demarest/Old Tappan**



A Bergen County Technical Schools  
*Career & Technical Education*  
satellite high-school program of choice

## UX/UI DESIGN

Interactive Design is a Career & Technical Education program that introduces students to the exciting field of UX/UI Design. UX refers to User Experience Design, while UI refers to User Interface Design. This evolving multidisciplinary field underlies many of today's fastest growing industries, including web-based communications, advertising, and entertainment. UX/UI design is driven by the imperative to design something that meets a user's needs, and inspires consumers to want to engage with a digital product.

Today's designers must be entrepreneurs observing market trends, exploiting innovation, creating intellectual property, and applying aesthetic solutions to enhance the value of a product, service or experience. In this course, students will witness UX design at work and evaluate its effectiveness through movies and television, video games, mobile technology, hardware, museum exhibits and of course, the web. Throughout, students will also be introduced to a variety of technology hardware and software, including virtual reality, app design, and 3D modeling software, to name a few.

## CTE COURSES

**Essentials of Interactive Design**—A comprehensive overview of Interactive Design. Students will become well-versed in the principles of user-centered design, including the underlying psychology and sociology that guides user design.

**Design Strategy and Information Architecture**—A hands-on course where the primary focus will be to design a user interface that addresses a problem or need.

**Visual Design**—A course focusing on the aesthetics behind successful design.

**Interactive Design Studio**—A project-driven and product-based capstone course.

## SCOPE AND SEQUENCE

### 9TH GRADE:

#### CTE Course—Essentials of Interactive Design

Science—Biology  
Math—Algebra I, Geometry, or Algebra II Honors \*\*  
Social Studies—U.S. History I  
Language Arts—English I  
World Language—Multiple World Languages are Available  
Health & PE—Health & PE 9

### 10TH GRADE:

#### CTE Course—Design Strategy and Information Architecture Science—Chemistry

Math—Geometry, Algebra II, or Pre-Calculus Honors \*\*  
Social Studies—U.S. History II  
Language Arts—English II  
World Language—Multiple World Languages are Available  
Health & PE—Drivers' Ed & PE 10

### 11TH GRADE:

#### CTE Course—Visual Design

Science—Physics  
Math—Algebra II, Pre-Calculus, AP Calculus AB or BC, or AP Stats \*\* Social Studies—World History  
Language Arts—English III  
World Language—Additional World Languages/Elective Available  
Visual & Performing Arts—Requirement fulfilled through CTE Course Health & PE—Health & PE 11

### 12TH GRADE:

#### CTE Course—Interactive Design Studio

Science—Electives Available  
Math—AP Stats (Recommended), or Pre-Calculus, Calculus, AP Calc AB or BC, Discrete Math, or Trigonometry and Statistics \*\*  
Social Studies—Financial Literacy  
Language Arts—English IV  
World Language—Additional World Languages/Elective Available  
Health & PE—Health & PE 12  
Financial Literacy—PFL requirement fulfilled through virtual, hybrid, or approved electives

#### Senior Work Based Learning Experience

#### Dual Enrollment class with William Paterson University in Design Strategy & Informational Design

Optional electives offered in each grade. AP Comp Sci recommended as senior year elective.

\* Course titles in red represent dual-enrollment classes where students earn both high school and college credits.

\*\* Courses are contingent upon placement test results.

Scope and sequence details are subject to change

## Profile of an Institute for Interactive Design Technology Student

- A student who desires both an academic and technical educational environment that focuses on the application of visual design, psychology, business, and technology to improve human-computer interaction.
- A student with a 3.0-3.4 gpa and proficient scores on the NJSLA/Terra Nova who demonstrates the desire to challenge her/himself in college-level career and academic coursework.

## SCOPE AND SEQUENCE

### 9TH GRADE:

#### CTE Course—Sports Medicine & Athletic Training

Science—Biology

Math—Algebra I, Geometry, or Algebra II Honors \*\*

Social Studies—U.S. History I

Language Arts—English I

World Language—Multiple World Languages are Available

Health & PE—Health & PE 9

### 10TH GRADE:

#### CTE Course—Anatomy & Physiology

Science—Chemistry

Math—Geometry, Algebra II, or Pre-Calculus Honors \*\*

Social Studies—U.S. History II

Language Arts—English II

World Language—Multiple World Languages are Available

Health & PE—Drivers' Ed & PE 10

### 11TH GRADE:

#### CTE Course—Movement & Performance

Science—Physics

Math—Algebra II, Pre-Calculus, **AP Calculus AB or BC**, or **AP Stats** \*\* Social Studies—

World History

Language Arts—English III

World Language—Additional World Languages/Elective Available

Visual & Performing Arts—Video Editing & Analysis

Health & PE—Health & PE 11

### 12TH GRADE:

#### CTE Course—Energy Systems

Science—Electives Available

Math—**AP Stats** (Recommended), or Pre-Calculus, **Calculus**, **AP Calc AB or BC**, Discrete Math, or Trigonometry and Statistics \*\*

Social Studies—Financial Literacy

Language Arts—**English IV**

World Language—Additional World Languages/Elective Available

Health & PE—Health & PE 12

Financial Literacy—PFL requirement fulfilled through virtual, hybrid, or approved electives

#### Senior Work Based Learning Experience

#### Dual Enrollment class with William Paterson University in Anatomy & Physiology

Optional electives offered in each grade. AP Comp Sci recommended as senior year elective.

\* Course titles in red represent dual-enrollment classes where students earn both high school and college credits.

\*\* Courses are contingent upon placement test results

Scope and sequence details are subject to change

## Profile of an Institute for Sports Medicine & Exercise Science Student

- A student who desires both an academic and technical educational environment that focuses on the study and application of the scientific principles that underpin physical performance.
- A student with a 3.0-3.4 gpa and proficient scores on the NJSLA/Terra Nova who demonstrates the desire to challenge her/himself in college-level career and academic coursework.

## SPORTS MEDICINE & EXERCISE SCIENCE

The Institute for Sports Medicine & Exercise Science offers a four-year sequence of courses involving the study and application of the scientific principles that underpin physical performance. The program will incorporate the traditional disciplines of anatomy and physiology, biomechanics, sport psychology, athletic training, and nutrition. Students will cover a range of topics and carry out experimental investigations in both laboratory and field settings to acquire the knowledge and understanding necessary to critically analyze human performance, optimize athletic output, and minimize injury.

### CTE COURSES

#### Sports Medicine & Athletic Training

—A hands-on, introductory course on athletic training techniques including stretching, joint wrapping, icing, injury cause and prevention, and emergency injury management. Students will be exposed to various career opportunities in the field of sports medicine.

#### Anatomy & Physiology

—An introduction to body systems including the skeletal, muscular, cardiovascular, and respiratory systems. Students will examine the interaction of these systems as they relate to sport and performance.

#### Movement & Performance

—A course allowing students to perform movement analysis, examining the neuromuscular function and biomechanics of athletes and how they affect speed, agility, balance, and coordination.

#### Energy Systems

—An introduction to energy production through the Krebs cycle, nutrition, biochemistry of muscle fatigue, and carbohydrate and fat metabolism, as well as the importance of a balanced diet in relation to wellness and athletic performance.

## Clubs & Activities

Academic Decathlon	Latin Club
All School Production	Library Council
Archery Club	Literary Magazine
Art Club	Mathematics Team
Band Groups	Media Club
Biology Club	Media Tech Club
Book Club	Military History Club
Building Report	Multicultural Club
Chess Club	National Art Society
Chinese Club	New Traditions
Computer Science	Newspaper
Dance Team	Organic Gardening Club
Debate Team	Panda
Drama Club	Peer Mediation
Earth Club	Peer Mentor
EMS	Photography Club
FBLA	School Photographer
Foods Club	Science Team-Biology
Film Making Club	Science Team-Chemistry
French Club	Science Team-Physics
Freshman Advisor	Senior Class Advisor
Gifted and Talented	Ski Club
Hand in Hand Club	Sophomore Class Advisor
Heroes and Cool Kids	Spanish Club
Honor Society	Spectrum
HOSA	Stage Crew
Instrumental Group	Student Council
Intramurals	Student-Faculty Senate
Investment Club	Technology Student Association
Italian Club	Tri Music Honor Society
Japan Club	Vocal Groups
Jazz Club	Web Club
Junior Advisor	Yearbook

## Athletics

### FALL:

Football  
Boys/Girls Soccer  
Boys/Girls Cross  
Country  
Girls Tennis  
Girls Volleyball  
Cheerleading  
Field Hockey

### WINTER:

Boys/Girls Basketball  
Boys/Girls Bowling  
Boys/Girls Indoor  
Track & Field  
Ice Hockey  
Boys/Girls Swimming  
Wrestling

### SPRING:

Baseball  
Softball  
Boys/Girls Golf  
Boys/Girls Lacrosse  
Boys Tennis  
Boys/Girls Track & Field