

## CAREER & TECHNICAL EDUCATION

	<u>Staff</u>	<u>Students</u>	<u>Budget</u>	<u>Cost Per Student</u>
(Business)	6.60	777	\$ 683,934	\$880
(Fam. & Cons.)	7.20	1,426	\$ 731,612	\$513
(Technology)	11.80	2,006	\$1,200,792	\$599

There are many ways of measuring how a program is progressing. For the purposes of this program summation, I will focus on enrollment trends, student success, courses offering college credit, and curriculum and instructional modifications. Below is a summation of how the Career and Technical Education program performed in total. The attached reports provide an evaluative review by discipline to better articulate progress within those specific departments.

The chart below provides a visual summation of the performance indicators noted above.

<u>Department</u>	<u>School</u>	<u>Faculty (FTE's)</u>	<u># of Crs</u>	<u>Enrollment</u>	<u>Student FTE's</u>	<u>Passing Rate</u>	<u>College Credit Courses</u>	<u>College Credit</u>
Business	SHS	6.3	20	777	493	97%	5	100%
FACS	SHS	3.5	13	455	350	91%	1	100%
Home & Careers	SJHS	3.1	2	971	713	100%	N/A	N/A
Technology	SJHS	4.3	2	971	950	100%	N/A	N/A
Technology	SHS	7.5	25	1035	613	93%	3	100%
Totals	Both	24.7	62	4,209	3,119	96%	9	100%

### Curriculum and Program Developments:

Listed below are the various course modifications completed or in progress. Most of these are discussed in more detail in the individual discipline reports that follow.

#### ❖ Business

- Two students recognized by the Business Review and the BTA for their achievements.
- Developed course curriculum materials for a new course entitled Fundamentals of Business to be offered in the fall term of 09-10.
- Developed course curriculum materials for a new course entitled Principles of Marketing to be offered in the fall term of 09-10. This course is directly articulated with Hudson Valley Community College and will offer students 3 college credits for successful completion.
- Increasing the number and variety of career sites available for seniors enrolled in the Career Exploration Internship Program
- Instructional Technology updates
  - Expanded access to wireless networking services
  - 26 new computer workstations in lab A201 which allowed for updating of the computer workstations in A206

## **CAREER AND TECHNICAL EDUCATION** (cont.)

Smart Boards added to labs A201 and A202  
New large screen projectors in A201, 202, and 204

- ❖ Family & Consumer Science
  - Conducted a new course in Clothing Design and Construction
  - 12 new computers workstations in providing both Mac and PC platforms
  - Replacement of a refrigerator and a range in A136
  - Replaced the desks in A135
  - Prepared plans for the renovation of the Clothing & Textiles Lab A135.
  - Community Service projects including assisting in the Ronald McDonald House, local food pantry, and Thanksgiving at Equinox.
- ❖ Home & Careers
  - Converted the student career portfolio project to an intranet based project
  - Expanding access and integration of the student portfolio to all CTE courses
  - Updating of two printers to the Home and Careers classroom and planning for new computer access and activities to begin 2009-10.
  - Replacement of two sewing machines
- ❖ Junior High Technology
  - Prepared plans for the relocation of space between D116 and D118
  - Integration of new Lego simulation lab activities
  - Replaced two band saws and two belt sanders
  - Integration of lab activities focused on energy awareness and conservation
- ❖ Technology
  - Acquisition of new computer integrated laser engraver used in architecture and robotics.
  - Continued infusion of the Auto CADD/Inventor as the primary technological communications tool throughout the department.
  - Introduction of video morning announcements for the High School
  - Completed a curriculum development project to re-design and update the Principals of Engineering elective.
  - Completed a curriculum development project to update the IRP 3 Technology/Math Science curriculum.
  - Completed a curriculum development project to prepare course materials for a new Engineering Capstone course to be offered for the first time in 2009-10.
  - Participated in the FIRST Robotics project competitions for the first time and were named the rookie team of the year and invited to participate in the national level competition in Atlanta Georgia.

## **OBJECTIVES**

- Continue to work with the State Education Department to begin develop program proposals in the areas of Pre-engineering and Marketing and Finance.
  - Identification of sequential coursework to be completed grade eight through twelve

## **CAREER AND TECHNICAL EDUCATION** (cont.)

- Establish the District Steering Committee for Career and Technical Education.
- Establish a District/Advisory Council for Career and Technical Education
- Representation on this committee should include district personnel, industry representatives, and representatives of higher education. The objective of the council will be to provide a forum for collaboration to ensure course content is current, relevant and rigorous.
- Develop and distribute descriptive program guides to assist students, parents and guidance personnel in reaching informed decisions regarding career education preparation.
- Align course curriculum with New York State Standards and 21<sup>st</sup> Century workforce recommendations

Evaluation: Were the steps noted above completed? Was a proposal for program certification made to the New York State Education Department?

Progress has been made on all five action steps identified:

- We continue to work with the Career & Technical Education Resource Center to identify the course sequences that will meet state certification requirements and the necessary industry recognized assessments that will be used to assess commencement level work.
  - A proposal to establish both a district Career & Technical Education Steering Committee and a district Industry Advisory Board was submitted and accepted by the Superintendent and the Board of Education this spring and has both have been addressed in the district budget proposal for the 2009-2010 school year.
  - The newly formed CTE Steering Committee will be establishing the Industry Advisory Board and approving the board's agenda for the first year's work. The board will assist with external review of our certification proposal.
  - A resource guide was developed and distributed as part of the grade eight parent/student orientation program. This guide will be revised annually to reflect program changes and recommendations to enhance the guide's effectiveness.
  - Current curriculum aligns well with the identified 21<sup>st</sup> century skills as well as the New York State Math, Science, and Technology(MST) and Career Development and Occupational Studies(CDOS) standards. Efforts continue to emphasize and assess content integration and career readiness skills.
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- Review all CTE course curricula in an effort to identify the need to update courses currently offered or identify new course topics needed. Particular attention will be given to updating coursework in the Marketing and Finance.

Evaluation: Was a review of course curricula conducted? Are there any recommendations for new courses or course content changes forthcoming?

## **CAREER AND TECHNICAL EDUCATION** (cont.)

Summer curriculum projects were completed for a variety of course offerings:

- The Early Child Development and the University in the High School Child Development course to update current content and assignments and to integrate on-line instructional resources (Blackboard) provided by the college.
  - The IRP 4 Business and FACS programs will be adopting a new college level math course beginning in the fall of 2009 and the instructional teams have updated the integrated project work planned to better align with the new content being presented. The new course being offered appears to align better with the post secondary needs of the students pursuing these career fields.
  - The IRP 4 Technology team worked over the summer to redesign the integrated projects being assigned to provide better integration of the shared content.
  - A curriculum project for the Principles of Engineering course resulted in a significant revision of the course leading to a more survey based approach to the content. Providing students with an overview of engineering fields while emphasizing the common skill set assist students in making informed career decisions and college program selection.  
The program review also resulted in the development of new courses in basic business skills and marketing which will be offered for the first time next year.
- Encourage the development of content specific activities at the high school level to incorporate a web based student portfolio created as part of the eighth grade Home and Careers program.

Evaluation: Were activities created? Do faculty and students find this to be a viable and useful resource?

Significant progress was made this year to move the portfolio work completed by the grade 8 students to a digital format which will allow for better integration into the High School CTE courses.

## CAREER AND TECHNICAL EDUCATION (cont.)

### Business Education

**Enrollment Trends:** During the 2008-09 school year, the Business Education department provided students with a broad selection of course offerings. These courses are designed to provide both career exploration and skill development in a broad spectrum of business and marketing fields and to accommodate the full range of learning abilities. The Business and Marketing component of the Integrated Regents Program provided applied learning opportunities for one hundred and twenty three 10<sup>th</sup> - 12<sup>th</sup> grade students. These courses provide a high degree of relevance by directly applying the Math, Science and communication skills students learn in their core courses. The Keyboarding and Sports and Entertainment Marketing courses remain popular with a total enrollment of 107 students and 77 respectively. While remaining strong, enrollment in Business Law has returned to more traditional levels following a 150% increase in enrollment during the 2007-08 school year. Given the importance for all of our students, we are very pleased to see the steady growth in the study of Financial Decision Making. And finally, the Career Exploration and Internship program provided internships for 133, approximately 25%, of our grade 12 students.

#### Student enrollment by course

	2008-2009		2007-2008		2006-2007	
	Number of Students Enrolled	% of Student Body Enrolled	Number of Students Enrolled	% of Student Body Enrolled	Number of Students Enrolled	% of Student Body Enrolled
IRP 2	87	18	68	3.3%	81	4.70%
IRP 3	16	3	32	1.5	33	1.35
IRP 4	20	4	12	.6	16	.94
Intro to Business I	50	2	21	1	19	1.18
Intro to Business II	17	1	14	.7	-	-
Keyboarding	71	3	86	4.2	79	4.65
Advanced Keyboarding	25	1.2	23	1.1	21	1.24
Accounting 1R	21	1	28	1.4	25	1.4
Business Computer App.	11	.5	23	1	26	1.53
Business Law	54	3	101	5	40	2.35
Business Ownership	34	2	63	3.3	80	4.71
Business Statistics	N/A	N/A	N/A	N/A	10	.5
College Keyboarding	11	.5	17	.8	18	1.16
College Accounting	18	.9	26	1.3	22	1.29
E-Commerce	13	.6	22	1	18	1.16
Financial Decision Making	86	4	74	3.5	63	3.71
Organization & Mgmt.	22	1	22	1	21	1.24
Quantitative Business App.	11	.5	21	1	17	1
Sports & Entertainment Mktg.	77	4	123	6.2	97	5.71
CEIP	133	25	124	4.82	90	4.82
Totals Enrollment (full time equivalent)	777 (493)	37.6 24%	900 (598)	44.5 25%	776 (505)	25%

## **CAREER AND TECHNICAL EDUCATION** (cont.)

### **Student Success Rate:**

Students were able to demonstrate a strong mastery of the content and skills conveyed in their Business and Marketing courses as evidenced by the overall departmental success rate of 97%. Individual student motivation accompanied by course presentations and projects designed to encourage participation, contribute to this outstanding rate of achievement. Instructors encourage student questions and provide individualized instruction during and outside of class time. Given the increased level of rigor and effort required by the department's college level coursework, we are very pleased to note that 100% of the students who chose to pursue college credit were successful in achieving that goal.

### **Percentage of student success by course**

	<b><u>2008-09</u></b>	<b><u>2007-08</u></b>	<b><u>2006-07</u></b>
Accounting	100%	100%	95%
Advanced Keyboarding	100%	99%	92%
Business Computer Applications	100%	98%	100%
Business Law	100%	90%	93%
Business Ownership	86%	84%	100%
Business Statistics	N/A	N/A	100%
CEIP	99%	100%	98%
College Accounting	93%	100%	100%
College Keyboarding	100%	100%	100%
E-Commerce	100%	100%	100%
Financial Decision Making	99%	98%	94%
Intro. to Business I	100%	100%	93%
Intro. to Business II	94%	100%	93%
IRP 2	93%	98%	98%
IRP 3	86%	99%	100%
IRP 4	89%	100%	100%
Keyboarding	94%	99.5%	97%
Organization and Management	96%	88%	90%
Quantitative Business Applications	91%	100%	100%
Sports & Entertainment Marketing	99%	98%	99%

## CAREER AND TECHNICAL EDUCATION (cont.)

### Participation and success in the College in the High School Program

	2008-09 Number Enrolled	Number Paying Tuition	Credit Awarded	2007-08 Number Enrolled	Number Paying Tuition	Credit Awarded
Business Law (SCCC)	54			101	67	67
Business Statistics (HVCC)	N/O	N/O	N/O	N/O	N/O	N/O
College Accounting (SUNY Albany)	18			26	18	18
E-Commerce (SCCC)	13			22	7	7
Organization & Management (HVCC)	22	18	18	22	15	15
Quantitative Business Applications (HVCC)	11	8	8	21	11	11

### HIGHLIGHTS

- During the 2008-09 school years, Business department faculty began to address two areas of need through the development of new course offerings. Fundamentals of Business is designed to which is being offered for the first time in the Fall of 2009 term, is designed to meet the entry level career skills of our more at-risk students. The Principles of Marketing course being offered for the first time in the Fall 2009 term, will serve as a commencement level college articulated course of study for students pursuing a career in marketing or administration. Students will have the option of enrolling for three HVCC credit hours.
- Two of our outstanding Business students were recognized for their achievements during the 2008-2009 school year, Eric Johnson was recognized by the Capital Region Business Review as a recipient of their *40 under 40* award. Greg Bonamo was recognized as an outstanding business student by the local Business Teachers Association at their annual awards ceremony.
- Additional IT including 26 new computer workstations, 2 Smartboards and 2 high production printers were installed, providing an increased wireless networking access.
- The IRP IV business students formed a Junior Achievement business during the fall of 2008. Students simulated all of the steps required to own and operate a business from market research to the sale of common stock and culminating in the sale of their merchandise at the Crossgates Mall. During the spring term, the same group of students planned and conducted a forensics workshop with elementary students from the Blue Creek School. The workshop provided a

## **CAREER AND TECHNICAL EDUCATION** (cont.)

variety of hands-on activities which facilitated the high school students explaining the scientific principles and procedures to their younger counterparts.

- The Sports Entertainment Marketing classes participated in a joint field trip to the Basketball Hall of Fame in Massachusetts. During the spring term, business club members participated in a field trip to the financial district in Boston, Massachusetts.
- One of the most valuable opportunities provided to our student population by the Business Education department is the opportunity to intern in the career field of one's choice. Each year Career Exploration and Internship instructors work to match students with mentors in their chosen field. This necessitates continually seeking and engaging new career fields and mentors. During the 2008-09 year, 133, or approximately  $\frac{1}{4}$ , of our twelfth grade students were provided with internships, one of our largest groups ever.
- Instructional technology infrastructure continues to be enhanced. This year 26 of the laboratory workstations in the department were replaced with updated technology. In addition a new Smartboard and a large format projector were installed in Lab A201.
- The expertise, professionalism and caring of our Business department faculty is clearly demonstrated by the academic success of their students. Their efforts and talents are most appreciated. The support of Central administration and the Board of Education has been integral in the accomplishments to date and will remain a critical component in the progress made toward providing a program which reflects current instructional and technological trends for our students.

## **OBJECTIVES**

- Pursue the potential for college articulation with one of our Business Marketing courses.

Evaluation: Was an articulation agreement reached? With which higher education institutions was articulation explored?

Curriculum review identified the need for an additional course in marketing to strengthen the business marketing and administration sequence. As a result the Principles of Marketing course will be launched this coming spring and will offer both college and local credit options. Twenty three students have requested the course for the 2009-2010 year to date.

- Pursue a new initiative to provide a Business Basics course specifically designed to meet the career preparation needs of our more academically challenged

## **CAREER AND TECHNICAL EDUCATION** (cont.)

students. This course would be developed with input from special education, supervisors and faculty.

Evaluation: Was a proposal for a new initiative submitted? Was the proposal adopted by the Superintendent and Board of Education?

A Fundamentals Business course offering was proposed and approved for next year. A summer curriculum development project is planned to complete course development and planning in preparation for the fall term.

### **Family and Consumer Sciences 7–12**

#### **Student enrollment by course**

	<b>2008 - 2009</b>		<b>2007 - 2008</b>		<b>2006 - 2007</b>	
	<b># Students Enrolled</b>	<b>% Student Body</b>	<b># Students Enrolled</b>	<b>% Student Body</b>	<b># Students Enrolled</b>	<b>% Student Body</b>
Intro. to Occ. I	0	0	0	0	0	0
Careers in Human Services	8	.3	11	.5	N/O	N/O
Independent Living	18	.8	13	.5	0	0
Intro. to Early Childhood	59	3	47	3	51	3
Adolescent Development	33	1.5	49	2.53	43	2.53
Housing and Interior Design	47	2	42	3.71	63	3.71
International Foods	61	3	61	3	66	3.88
Clothing & Textiles	52	2.5	N/O	N/O	71	4.18
Clothing Construction	18	.8	N/O	N/O	N/O	N/O
Food & Nutrition	38	2	38	2	41	2.41
Fitness & Nutrition	34	2	N/O	N/O	25	1.47
Food Processing	13	.6	11	.5	12	.55
Families in a Diverse World	N/O	N/O	N/O	N/O	18	.9
Child Development (HVCC)	21	1	21	1	25	1.47
IRP I, III, IV	105	6.5	136	6.5	135	7.94
Total FACS	455	22	479	24	557	25

#### **Percentage of student success by course**

Student Success Rates – Students continue to perform well in the Family and Consumer Science electives. This year, 98% of course participants achieved success. Also noteworthy, 100% of the students who chose to pursue college credit for the Child Development class successfully achieved their goal. Student success in these courses is largely attributable to the content relevance and the application based style of presentation. Students receive individual assistance and support as required and parents are kept well informed of student progress.

## **CAREER AND TECHNICAL EDUCATION** (cont.)

	<b>2008-09</b>	<b>2007-08</b>	<b>2006-07</b>
Introduction to Occupations 1	Not offered	N/O	N/O
Careers in Human Services	100%	100%	N/O
Independent Living	100%	100%	N/O
International Foods	98%	93%	90%
Fitness and Nutrition	100%	N/O	94%
Food and Nutrition	100%	100%	94%
Adolescent Development	100%	100%	100%
Introduction to Early Childhood	99%	99%	100%
Housing and Environment	96%	97%	96%
Families in a Diverse World	Not offered	N/O	100%
Clothing and Textiles	100%	99%	100%
Food Processing	100%	100%	100%
Child Development – HVCC	84%	98%	90%
IRP I	100%	100%	100%
IRP III	100%	100%	100%
IRP IV	100%	100%	100%

## **HIGHLIGHTS**

- In addition to scholastic achievement, we are also very proud of the success our students achieve employing their skills outside of the classroom and toward community based need. The Junior High School Home & Careers students complete a unit of study on Global Humanitarianism as part of the eighth grade syllabus. As part of this unit, the students designed and constructed fleece hats, mittens, neck warmers, and blankets. These items were sent to *Adoptions Together*, an organization that distributes the projects to orphanages in Russia and China. Additional fleece blankets were given locally to Unity House, Project Linus, and to students in crisis within our School District
- At the High School, students participated in our FCCLA organization. These students volunteered at the Regional Food Bank, the Arbor Hill Soup Kitchen, the pediatric ward at Albany Medical Center, and at the Ronald McDonald House in Albany. They also constructed and distributed pillows and craft kits for children at Albany Medical Center. At Thanksgiving the group helped to prepare meals for needy families through the Equinox program, and they helped to provide food and gifts for those in need through the Adopt-a-Family program.

## **OBJECTIVES**

- Continue research and development of new course initiatives in Gerontology and Culinary/Hospitality Careers to be offered as part of the Family and Consumer Sciences program. The potential of including these courses in the College in the High School Program will also be investigated.

## CAREER AND TECHNICAL EDUCATION (cont.)

Evaluation: Was a review of course curricula conducted? Are there any recommendations for new courses or course content changes forthcoming?

While there continues to be significant interest in developing sequential course work in these career areas, demand for all of the current Family and Consumer Science course offerings remains high and will limit the ability to expand offerings in this area with the current resources available.

- Monitor the first year implementation of the new Clothing, Design and Construction Course.

Evaluation: Was the new elective scheduled? Was there sufficient enrollment to conduct the class? Were course results summarized?

The Clothing Design and Production course was offered for the first time this year with an enrollment of 18 students. The course has gone well with all students meeting with success.

## Technology 7–12

**Enrollment Trends:** Students in grades seven and eight participate in a half year of study in Technology resulting in approximately 1000 students participating each year. At the High School, Technology Education electives continue to appeal to a wide variety of students. Design and Drawing for Production, Architecture, Materials Processing, and computer based courses continue to be very popular. In addition, approximately fifty percent of the Integrated Regents Program students selected Technology Education as the career focus area for the last two years of their program. Serving over 1,000 students with 26 elective courses, the department offers students the opportunity to explore a variety of potential career areas. Students begin to develop the ability to design and communicate technically while gaining processing skills.

Student enrollment by course	2008-09		2007-08		2006-07	
	# of Students	% of Students	# of Students	% of Students	# of Students	% of Students
Principles of Engineering	18	1.7	32	1.7	17	.94
Residential Construction	51	2.4	57	2.9	68	3.8
Audio Electronics	15	.7	18	1.0	35	1.9
Graphic Communications	20	1	18	1.0	22	1.2
Broadcast Communications	41	2	36	1.8	68	3.6
Computer Aided Drafting	25	1.6	19	1.0	24	1.3
Architectural Drawing	60	4	38	1.8	22	1.2
Computer Applications	37	1.7	58	2.9	51	2.8
Design & Drawing for Prod.	114	24	101	5.0	84	4.67
Energy Systems	14	.7	11	.50	13	.72

Student enrollment by course	2008-09		2007-08		2006-07	
	# of Students	% of Students	# of Students	% of Students	# of Students	% of Students
Exploring Telecommunications	51	2.5	60	3.0	60	3.3
Home Electricity	33	1.5	18	1.0	23	1.5
Intro. to Tech Occupations	5	-	0	0	0	0
IRP I	87	18	94	4.8	92	5.1
IRP II	86	17	79	4.0	81	4.50
IRP III	39	7.3	30	1.5	29	1.61
IRP IV	17	3	16	.90	13	.72
Land Transportation	51	2.5	50	2.5	75	4.17
Manufacturing Processes	19	.9	11	.5	17	.94
Materials Processing – Metals	46	2.2	43	2.1	56	3.1
Materials Processing – Plastic	14	.6	23	1.1	15	.83
Materials Processing – Wood	52	2.5	55	2.7	56	3.1
Networking and the Internet	53	2.5	44	2.2	40	2.2
Technical Photography	50	9.4	48	2.4	64	3.4
Transportation Systems	37	1.8	32	1.5	36	2.00
Computer Integ. Manufacturing	11	.5	N/O	N/O	N/O	N/O
Total (Full Time Equivalent)	1035 (613)	30%	1004 (592)	30%	1061 (602)	30%

**Student Success Rate:** Student performance in the Technology electives remains very strong with a 93% success rate. Technology courses, like other career based electives, allow students to explore both career and avocational interests and to build upon and apply many of the academic skills they have learned in core academic courses. In addition, many students find in these courses an opportunity to be creative and learn kinesthetically. Instructors make an effort to ensure that the content being presented reflects current processes and utilizes examples that are relevant to their students. Students who encounter difficulty are provided with additional assistance as needed.

Three University in the High School electives were offered and all students enrolling in the college credit option for these classes successfully completed their course work receiving both local and college credit for the class.

#### **Percentages of student success by course**

	2008-09	2007-08	2006-07
	% of Students Passing	% of Students Passing	% of Students Passing
Architectural Drawing	100%	99%	100%
Architectural Drawing II	96%	100%	New Course in '07
Audio Electronics	93%	100%	97%
Broadcast Communications	100%	%	100%
Computer Aided Drafting	100%	100%	100%
Computer Applications	100%	100%	96%

	<b>2008-09</b>	<b>2007-08</b>	<b>2006-07</b>
	% of Students Passing	% of Students Passing	% of Students Passing
Design & Drawing for Production	97%	100%	100%
Energy Systems	100%	100%	100%
Exploring Telecommunications	93%	95%	100%
Graphic Communications	100%	97%	67%
Home Electricity	100%	100%	100%
Introduction to Tech Occupations	Not Offered	Not Offered	Not Offered
IRP I	99%	97%	93%
IRP II	93%	100%	100%
IRP III	98%	98%	100%
IRP IV	100%	100%	100%
Land Transportation	100%	100%	100%
Manufacturing Processes	94%	100%	100%
Materials Processing – Metals	76%	96%	96%
Materials Processing – Plastics	100%	99%	100%
Materials Processing – Wood	98%	95%	98%
Networking and the Internet	97%	99%	97%
Principles of Engineering	100%	100%	100%
Residential Construction	98%	92%	100%
Technical Photography	96%	95%	93%
Transportation Systems	95%	100%	100%

### Participation and success in the College in the High School program

COURSE	2008-09			2007-08		
	# Enrolled	# Paying Tuition	Credit Awarded	# Enrolled	# Paying Tuition	Credit Awarded
Broadcast Communications	41	18	18	36	12	12
Manufacturing Processes	15	9	9	11	11	11
Residential Construction	46	18	18	57	24	24

### **HIGHLIGHTS**

- During the summers of 2008 and 2009, faculty members worked to revise and update the Principles of Engineering curriculum. Pre-engineering students experienced both a variety of new activities, including the West Point Bridge Construction project, and instruction that reflects 21<sup>st</sup> century engineering courses and field work. These students were given an opportunity to apply to participate in a Senior Engineering Capstone project for the 2009-2010 school

## **CAREER AND TECHNICAL EDUCATION** (cont.)

year. Four of the student projects proposed were accepted and will be completed during their senior year. Students will work in conjunction with practicing engineers and secondary engineering programs to complete their research and product prototypes.

- Over the past two years, Shaker Technology has adopted the Auto CAD\Inventor software suite as our primary technical communication tool. Students are introduced to the software as they learn basic technical drawing techniques at the Junior High School and those skills are expanded and enhanced in the Design and Drawing for Production course at the High School. Utilizing this software allows students to progress from design to production by using their CAD drawings with computer integrated machinery (CIM). For example, Advanced Architecture students are utilizing the equipment to produce a very detailed model of the structure they have designed.
- A new computer integrated machining lab was designed during the 2008-2009 school year and will be available for student use in the fall of 2009. The construction of this facility will also result in an updated classroom for engineering, architecture and photography students. Improvements to the facilities are also planned for the Junior High Technology labs involving a redistribution of classroom space and the replacement of a number of outdated pieces of equipment. These renovations will result in a more effective and safe learning environment in the two classrooms.
- During the 2008-09 school year Technology students participated in a variety of exciting activities both in and outside of the classroom. For example:
  - The robotics club at the High School began participating in national FIRST Robotics program. The two club advisors began the season by attending the “Kick Off” dinner held at the home of Dean Kamen, an inventor by trade and founder of this initiative. The students spent many long nights and weekends designing and constructing a robotic device for competition. They were named Rookie Team of the year at the regional competition in Rochester, NY and were invited to compete at the national event held in Atlanta, Georgia last spring where they finished in the top one third of all competitors.
  - Junior High Technology students participated in an after school event which involved designing and constructed life size cardboard boats. The activity taught a great deal about displacement and buoyancy. The activity culminated in a boat race in the High school pool and included Mr. Mitchell and Ms. Savery as participants. Truly a “Kodak Moment”.
  - The Broadcast class and club began broadcasting morning video announcements two days a week and they were very well received. There is a strong possibility that they will be broadcasting 5 days a week beginning in 2009-10. In addition, students continue to produce “Safe at Home” video clips designed to provide safety information for homebound senior citizens as a class project.

## **CAREER AND TECHNICAL EDUCATION** (cont.)

- Over the past four years the Technology Faculty, in collaboration with Administration and members of the Board of Education, have worked tirelessly to update the department's course offerings and facilities to better prepare our students for 21<sup>st</sup> century careers. The result has been a review and revision of much of the course content, infusion of instructional technology on a broad scale, adoption of a universal technical communication tool, new computer controlled equipment, re-modeled classroom facilities and the creation of a pre-engineering curriculum. The reward for these efforts lies in the knowledge that our students are receiving the best preparation possible and are better prepared to make the informed career decisions that come with commencement from high school.

## **OBJECTIVES**

- Monitor the implementation of the revised Principles of Engineering Course.

Evaluation: Was the new elective scheduled? Was there sufficient enrollment to conduct the class? Summarize the course results.

The Principles of Engineering class was offered this year with an enrollment of 19 students. Four of these students have applied for admission to the Engineering Capstone project scheduled to begin in September 2009. The revised curriculum resulted in the inclusion of the West Point bridge engineering project, a guest study of the Route 87 exit 6 design project, and a guest speaker in the area of mechanical engineering.

- Submit a proposal for a new initiative to offer the Design and Drawing for Production course as an accelerated High School credit option for eighth graders. The following action steps will be required to address this objective:
  - Establish course description and outline for eighth grade initiative
  - Address hardware and software requirements for this course initiative
  - Address junior high scheduling demands to include this course initiative
  - Articulate a rubric to be employed in identifying potential course participants

Evaluation: Was a proposal for a new initiative presented? Was the proposal adopted by the Superintendent and the Board of Education?

An additional eight PC based computers with CADD software were added to the Junior High School Technology classrooms this school year which brings us closer to a sufficient number of workstations to provide the Design and Drawing for Production course at the Junior High School. As we complete renovations scheduled for rooms D116 and D118 this summer, we will examine the potential for creating a laboratory equipped to accommodate this course offering.

## **CAREER AND TECHNICAL EDUCATION** (cont.)

- Work to provide video broadcasts of the morning announcements at the high school.

Evaluation: Were video broadcasts of the morning announcements provided at the high school? How frequently is this format utilized?

A homeroom section has been created to accommodate the production and airing of video announcements during the homeroom period. Announcements are provided in a video format two days per week currently and discussions are underway to increase the frequency for next school year. Students working with their teacher have created an on-line program to allow for the submission of announcements and students from the broadcast classes and club have been gathering film clips of sporting and other events which become part of the morning broadcast