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**Middleburgh Central School District Technology Department**  
**CIHS RESIDENTIAL & LANDSCAPE CONSTRUCTION COURSE OUTLINE**Instructor: Scott E. Gray [sgray@middleburgh.k12.ny.us](mailto:sgray@middleburgh.k12.ny.us)**Fall 2009**

3 credits

**Prerequisites:** Open to students in grades 11&12 who have successfully completed Design and Drawing for Production. Students who wish to take this course in grade 10 must have special permission from the instructor.

**Course Description:** This course provides applied experiences in assorted construction techniques necessary in the development of residential and landscape construction projects. Students who wish to take this course for College in the High School Credit may receive 3 credits from SUNY Cobleskill. Students who do not wish to take this course for college credit, do not have to pay the required fee, but must adhere to the course syllabus as outlined, for local school credit. This course will consist of a variety of classroom and hands on activities including:

- Unit 1- History & Purpose for Residential and Landscape Construction
- Unit 2- Construction Equipment Safety and Maintenance
- Unit 3- DIGSAFE – Call before you dig guidelines
- Unit 4- Blueprint Reading and Drafting Techniques
- Unit 5- Construction Materials- wood, brick, insulation, sheetrock, concrete, metals & fasteners.
- Unit 6- Research in recycled, synthetic and natural building materials
- Unit 7- Surveying, Site Planning & Earthwork Calculations
- Unit 8- Concept and Detail Drawings
- Unit 9- Budgeting, Job Estimating & Scheduling
- Unit 10- Deck and Stairway Design and Construction
- Unit 11- Patio and Walkway Design and Installation
- Unit 12- Fencing & Retaining Wall Design and Construction
- Unit 13- Landscape Water Features and Irrigation systems
- Unit 14- Watershed Management - Soils and Aggregates, Sod / Seeding & Planting
- Unit 15- Tap Water and Wastewater Treatment
- Unit 16- Residential Foundations, including excavation, footings, floors, walls and concrete slabs
- Unit 17- Residential Framing, including wall, floor and roofing systems
- Unit 18- Residential Finish Work, including siding, windows, doors and trim
- Unit 19- Residential Electrical Systems, including low voltage, wind, and solar systems
- Unit 20- Residential Plumbing Systems, including PEX, copper and PVC pipe

All classroom instruction will be based on current NYS code practices. Coursework will also include hands-on labs in the school courtyard with the help of the UHS Environmental Science class. Required field trips will also supplement the classroom instruction.

**Career Possibilities:** Architect / Civil Engineer / Landscape Architect / Draftsman / Tradesman

**Course Objectives:** The overall objective of this course is to provide students with experiences in assorted construction techniques necessary in the development of landscapes and residential construction projects.

*At the completion of this course, students . . .*

1. *will be knowledgeable of the various types and characteristics of construction materials used in residential and landscape construction.*
2. *will have acquired basic electrical, plumbing, surveying, masonry and carpentry skills as applied to a variety of residential and landscape construction projects.*
3. *will be familiar with safe operating procedures and routine care and maintenance of tools and equipment used in residential and landscape construction.*
4. *will have gained experience estimating costs of residential and landscaping construction projects.*
5. *will be familiar with generating basic construction drawings for residential and landscape construction projects.*
6. *will have gained experience with the design, installation, and maintenance of residential and landscape construction projects.*
7. *will be knowledgeable in alternative forms of building materials and eco-friendly construction practices and techniques.*

**Notebooks:**

It is required that students keep a daily notebook (a three-ring style preferred), for notes and handouts. The binder will become an excellent resource of information for use later on in their studies, or if they build a house of their own in the future.

**Supplies:**

Each student must come to class prepared each day with the following:  
(2) #2 Pencils with erasers, (2) Ball Point Pens, (1) Spiral Notebook, (1) 3-ring binder

**Text:** The following texts will be provided for this course

Building Decks, Black and Decker

Basic Residential Plumbing Systems, Black and Decker

Basic Residential Electrical Systems, Black and Decker

Basic Residential Framing, Black and Decker

PaveTech Segmented Paving Manual, by PaveTech

**Field Trips:**

One or two required field trips may be scheduled during the year.

**Conduct:**

Students are reminded to ensure that at all times their actions and language are appropriate and professional.

**Safety:**

Students are reminded that this is a course in construction. Students will be instructed in safety procedures for particular activities and tools and equipment to be used, and are expected to follow these safety guidelines. Students should dress appropriately for lab. Excessively loose clothing poses a safety hazard and should be avoided. As many of the labs are outside, dress according to the weather. Open toed shoes are not permitted. A pair of good quality, leather work gloves is a good investment also. Students will not earn lab credit for days that they show up unprepared.

**STUDENTS WHO CARELESSLY OR DELIBERATELY ENDANGER THEMSELVES OR OTHERS BY THEIR ACTIONS WILL BE IMMEDIATELY DROPPED FROM THE COURSE.**

**Cell Phones:**

Under no circumstances are students allowed to use cell phones during class, this also includes text messaging. Students will be asked to leave the class or lab if your cell phone rings or if you disregard this rule. Students removed from class it will count as an un-excused absence.

**Attendance:**

Registration in a course assumes **FULL** participation in that course. Attendance is the responsibility of the student, and all class members are expected to attend each class. Students will be provided with adequate time to complete assignments. All work must be completed and turned in before any scheduled absence. It is very important that students are in class every day. If a student misses a class, it is their responsibility to make up the work and adhere to the project outline. Attendance will be taken at the beginning of class. Students who show up later than 20 minutes to class will be marked absent for that day. If a student will miss a class because of a lesson or a field trip, they must inform the instructor PRIOR to missing the class, and must get the notes and assignments they missed when they return. All work is due on the date specified; **no late work will be accepted** unless prior arrangements are made with the instructor

**Grading:**

A grading rubric will be completed for each project turned in. All project work must be handed in on time and successfully completed for full credit. We will have approximately 3 lecture days and 2 lab days a week. Lecture days will cover new material and work in the classroom. Lab days will be working in the school courtyard. Lab days will obviously be weather permitting, but you should be prepared to work outside in the fall and in the spring if the weather is tolerable.

Students will be quizzed weekly using the SyconEyes software installed on each of their computers. The quizzes will be used as an enforcement of topics discussed earlier in the week. There will be one major test per quarter which will outline the progress that the student has made during that quarter. Students with less than a 90 average at the end of the year will take a comprehensive final exam.

**Grading:** (continued)

The quarterly grade will be based on the following:

<u>Quarterly Grades</u>		<u>Course Grade</u>	
Labwork	300 pts	1 <sup>st</sup> Quarter Ave	= 20%
Projects	300 pts	2 <sup>nd</sup> Quarter Ave	= 20%
Lecture Exam	200 pts	3 <sup>rd</sup> Quarter Ave	= 20%
Quizzes	100 pts	4 <sup>th</sup> Quarter Ave	= 20%
Behavior	50 pts	Technopalooza	= 10%
Participation	50 pts	Portfolio	= 10%
<b>Total Pts./Qtr.</b>	<b>1000 pts</b>	<b>Final Average</b>	<b>= 100%</b>

Failure to complete all course requirements will constitute a failure in this course.

**Portfolio:**

The students will engage in a number of detailed projects and drawings throughout the year. Often these projects just get discarded, and only the memory of them remains. Each student will create a 3-ring style portfolio at the end of the year. This portfolio will include all of the drawings that they completed as well as hand-outs and notes that they obtained. The portfolio must have tabs for each component within and will have a professional cover page. This portfolio will equate to 50% of their Final Exam Grade, which will be an accurate representation of their progress throughout the year. The Construction Portfolio is due no later than June 10<sup>th</sup> 2010.

**Technopalooza 2010: "Our Tenth Anniversary"**

The MCS Technology department is very proud of their students work throughout the year. Technopalooza is an annual event, which is both a fundraiser for the Technology Department and a fun night of classic cars and technology exhibits. As a showcase of student work, The Middleburgh Central School Technology Department proudly announces Technopalooza 2010 on Friday, June 11<sup>th</sup> 2010, from 5-9PM. Students will be required to attend and present their work to the community. Their attendance and participation will equate to 50% of their Final Exam grade. If for some reason the student cannot attend the event, arrangements must be made 2-weeks prior to the event with the instructor.

I \_\_\_\_\_ have read the above course outline and have shared the information listed above with my Parent / Guardian. I will come to class prepared each day and will do my best to satisfy the requirements as stated above. I will also keep my school computer access in good standing, so I may continue to be enrolled in this course, and utilize the school's drafting software.

\_\_\_\_\_  
Student Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Parent / Guardian Signature

\_\_\_\_\_  
Date