



## Surveyor Curriculum at a Glance

Week	Year 1 - Topic	Year 2 - Topic	Year 3 - Topic	Year 4 - Topic	Year 5 - Topic
1	Introduction: Pretest	Math Review; Triangles; Equations; Volumes and Areas; Measuring Systems; Horizontal Curves; Review and Test	License and Trade Info Introduction and Study of Theory of Errors in Observations and Coordinate Geometry (COGO); Analysis and Adjustments of Survey Measurements; Exam	Leveling and Profiles Vertical Curves Cross-Sections Leveling and Typical Sections Earthwork volumes; Linear Projects; Grading Plans; Borrow Pit; Contour Method	Boundary Surveying Deeds and Written Evidence Field Evidence Virginia, The Byrd Act Reconstruction of Intent Review of Surveys Types of Warranty Deeds
2	Calculator Techniques				
3	Arithmetic Operations				
4	Fractions				
5	Fractions				
6	Decimals; Metric System				
7	Percents				
8	Quarterly Exam				
9	Ratio and Proportion	Traverse; Closures; Adjustments; Review and Test	Horizontal Curves; Formula Derivations; Note Keeping for Layout; Compound Reverse Curves; Exam	Unit Exam / History of Surveying Subdivision Design; Research, Schemes, Preliminary Layout Street Design Lot Computations, Curves Plans and Profiles	Case Law vs. Statute Law Review of Court Cases Resurveying in Subdivisions Dedic'n & Vacat'n Law Legal Descriptions
10	Ratio and Proportion				
11	Algebraic Laws/Operations				
12	Signed Numbers				
13	Equations and Formulae				
14	Powers and Roots				
15	Review				
16	Midterm				
17	Geometric Theorems	Intersections; Area Computations; Introductions-Vertical Curves; Topography/Contouring; Review and Test	Control Surveys and Geodetic Reductions; Horizontal and Vertical Control Networks; NGRS; Exam	Street Grading Plans Lot Grading Siting the Dwelling Unit Exam / Sketching the Lot Grading Plan Sketching the Lot Grading Plan	HLS's & Easements Adverse Possession Equitable Estoppels Review & Examination Introduction to Hydrology
18	Lines and Angles				
19	Area/Volume/Perimeters				
20	Pythagoras and Triangles				
21	Trigonometric Functions				
22	Angles and Arc Length				
23	Quarterly Review				
24	Right Triangles				
			Map Projections and State Plane Coordinates; Lambert Conformal and Transverse Mercator; Exam	Plotting Drainage Divides CPR CPR Public Lands Survey System	The Rational Formula The Anderson Formula Review & Test (Wks 17-19) Soil Conservation Service (SCS) Method
			Astronomic Azimuth Determination; Applied	Maps & Photographs Maps & Photographs Unit Exam / Ethics & Minimum Standards	SCS Method (Continued) Review & Test (Wks 21-22) Introduction to Hydraulics



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25	Oblique Triangles	Levels-Note Keeping; FEMA; Map Making/Plats; Taping/Corrections; APELSCIDLA Rules and Regulations; Review and Test	Astronomy and Celestial Coordinate Systems; Exam	Ethics & Minimum Standards	Storm Sewer Hydraulics
26	Sines			Construction Layout	Sanitary Sewer Design
27	Sines			Construction Layout	Review & Test (Wks 24-26)
28	Cosines			Safety, Health, & Surveying	Inlet Design
29	Cosines		Global Positioning System; Field Procedures; Various Observing Methods and Achievable Accuracies; Exam	Business, Economics, Finance	Inlet Design (Continued)
30	Advanced Calculator Applications			Statistics & Probability	Systems Head Losses
31	Review			Review	Culvert Hydraulics
32	Final Exam	Special Project Practicum	Unit Exam / Critique	Review and Exam	
33	N/A		Special Project Practicum	Special Project Practicum	Special Project Practicum
	<b>Total Hours - 96</b>	<b>Total Hours - 126</b>	<b>Total Hours - 126</b>	<b>Total Hours - 126</b>	<b>Total Hours - 126</b>

**Total Program Hours - 600**



## Surveyor Work Processes

	<b>Performance Completions</b>	<b>Hours Required</b>
A.	Application, care and practices of proper steel and cloth tape measurement procedures with the understanding of obtainable precision and accuracy in determining horizontal distances	200
B.	Application, care, and adjustment of surveying equipment	200
C.	Recording of hand and electronic field notes, including the use of reference sketches, describing control points and other pertinent field data	800
D.	Application, care, use, operation, and adjustment procedures for vertical and horizontal angles when performing topographic contouring and open or closed traversing	700
E.	Application, care, and use of equipment for selecting turning points, identifying topographical features on site surveys	800
F.	Establishing observation points, performing interior angle and deflection angles, controls for R/W and boundary identification, determine error of closure and accuracy	1,000
G.	Astronomical observation for azimuth determination, establishing GPS control sites, HARN stations, identifying picture points for aerial photography	500
H.	Application and use of field and office equipment including software programming for the development of plans and plats from field surveys	1,000
I.	Interpret plans for establishment of boundaries and R/W, drainage and utility layout, horizontal and vertical curves, slope and grade stakes	1,000
J.	Field and office procedures for area and volume determinations	500
K.	Application, care, and adjustment procedures for establishing elevation profiles and cross sections using differential, trigonometric, and GPS leveling procedures4/15/2008	800
L.	Application, care, and procedures for conducting research of land records, deeds, wills, and plats; Understanding, applying, and relating local or state codes, statutes, and regulations that influence or control surveying procedures	400
M.	Application, computation, and field procedures for establishing state plane coordinates	400
N.	Other general or advanced surveying operations that lead to the complete development of the surveying apprentice but does not clearly fit into the previous thirteen items	1,200



## Surveyor Work Processes

O. Health and Safety Procedures	500
Total Number of Hours Required	<b>10,000</b>

Make note of each different task you perform and record your work experiences in your log book. Enter the number of hours you spent performing a task in the column under the code letter for that task. There is a separate line to be used for each day of the month. Total each column and write these onto a new page at the beginning of each month. Call your VADOLI representative, 703-392-0900 ext. 102 or 131, if you have any questions.