



# 2023 ESI Education Programs

**ENGINEERS & SURVEYORS INSTITUTE**

4795 Meadow Wood Lane

Suite 115 East

Chantilly, VA 20151

703-263-2232

[www.esinova.org](http://www.esinova.org)

January, 2023

Dear ESI Colleagues,

We made it! Our workplace, homelives, and schedules were upended, but we have overcome and look forward to another academic year specifically designed for you!

Navigating COVID was an endeavor none of us had experienced. The ever-evolving pandemic created educational environments which continued to expand and change educational opportunities. ESI's cadre of instructors stepped up and delivered a comprehensive program while learning new modes of delivery themselves. Most importantly — we listened! With your feedback and 2022 Focus Group direction, 2023 class offerings have evolved into a plethora of instructional modes and content areas unique to your needs. Diverse classes will be offered during the same January through June timeframe. This year, look for site visit options, best practices delivered by postsecondary subject matter experts, Federal personnel introducing new trends in vetted research, and increased focus on technology-driven design. Whether you are new to civil engineering or still carry your slide ruler in your shirt pocket, ESI classes are an easy fit for your needs!

Your participation is central to our mission at ESI. Classes this year are further designed to enhance collaboration between public, private and state members, mentor new personnel, and establish a network of experts to further create site plan best practices which are sustainable and replicable.

As always, our doors are open and your thoughts and comments welcome. Please do not hesitate to contact us with any questions or concerns. Your success is our success!

Warmly,

Bill Sharpe  
Director of Member Education  
(703) 263-2508 Direct  
(703) 263-2232 Main

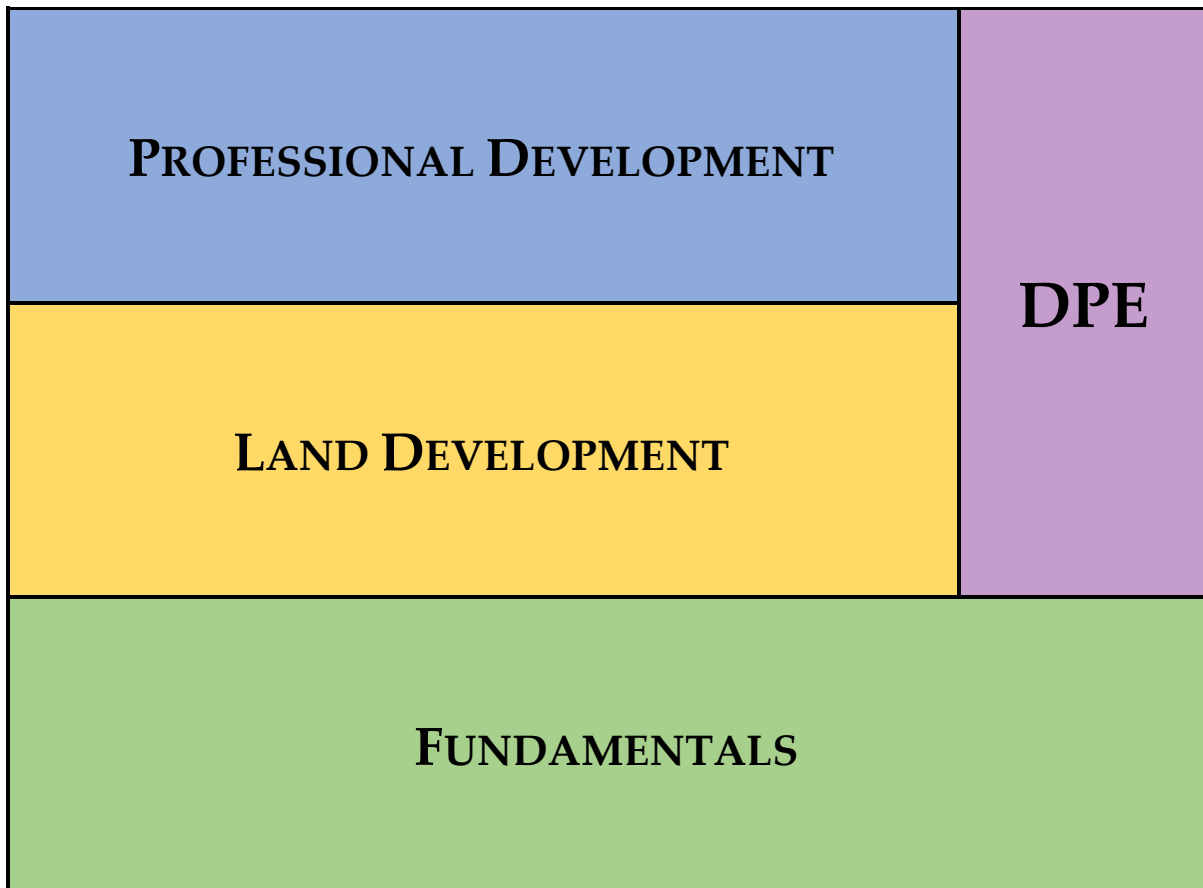
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## Introduction to ESI Education Programs

Continually changing industry demands require both public and private organizations to have employees with advanced skills and knowledge in order to respond to a variety of needs—often on short notice. To help these organizations stay abreast of diverse educational demands, ESI has structured educational programs tailored for practicing professionals of all skill levels and technical disciplines.

ESI education programs use the Knowledge for All Levels approach, rooted in Bloom’s Taxonomy for learning assessment. ESI’s organization of content is depicted in the figure below:



Put simply, ESI programs offer educational opportunities for professionals throughout their lifetime of practice, from Fundamentals through Professional Development to Symposia and Seminars on “hot topics” as they arise.

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## 2023 ESI Education Programs

There are six programs with corresponding series numbers outlined in the 2023 ESI Education Programs catalog.

<u>Name of Program</u>	<u>Series</u>
1. Fundamentals of Land Development	F100
2. Land Development Engineering	L100 and L200
3. Jurisdictional Updates	L300
4. Professional Development Consortium	P500
5. Symposia and Seminars	P700
6. Alternate Educational Opportunities	P800 and P900

### **Fundamentals of Land Development—F100 Series**

Land development professionals who have little experience working in Northern Virginia—or those who *work with* land development professionals—should explore the Fundamentals of Land Development program. This two-day course is tailored to individuals who have technical knowledge base associated with an undergraduate degree, minimal practical experience, or a lack of familiarity with policies and practices of Northern Virginia’s jurisdictions. See page 14 for more information on this course.

### **Land Development Engineering (LDE)—L100 and L200 Series**

Land development professionals looking for a comprehensive approach should consider the two-semester Land Development Engineering (LDE) program. These classes provide a basic level of understanding of land development engineering associated with land development plan design and review. Successful completion of these two semesters, plus a Jurisdictional class for each county in which the participant intends to become certified, is required before applying to obtain **Designated Plans Examiner (DPE)** certification. Detailed information regarding the DPE certification program begins on page 11, see pages 16-17 for concise semester schedules of the LDE program.

Individuals interested in specific aspects of land development may enroll in individual classes (piecemeal sequence) or an entire semester in the Land Development Engineering Program. Contact ESI for details.

### **Jurisdiction Updates—L300**

These update classes address changes to plan design and review policies, regulations, ordinances and procedures which have occurred over the last year in local jurisdictions, as well as common errors and misconceptions which impede plan approval in those jurisdictions. This is a required course to obtain DPE-eligible status.

### **Professional Development Consortium—P500 Series**

Experienced land development engineers, surveyors, investigators and landscape architects should consider the Professional Development Consortium. These classes incorporate annually changing topics requested by members, provide advanced and detailed information about relevant subjects within land development, surveying and related professions. Classes further address general and jurisdictional issues that directly relate to practical application of various professional skills associated with the industry. Instructors are subject matter experts, policymakers, and postsecondary instructors. Information on current PD offerings begins on page 18.

### **Symposia and Seminars—P700 Series**

These specialty classes are offered as needed to quickly provide latest information or techniques on key technologies, processes and practices in land development design. These concentrated, fast-paced programs afford members a comprehensive conduit to the latest techniques and requirements surfacing in the land development arena.

### **Alternate Educational Opportunities—P800 and P900 Series**

Members have options to attend educational initiatives which provide additional PD credit. Participation in these opportunities requires ESI approval to obtain credit as a PD elective.

ESI classes meet standards set forth in the Commonwealth of Virginia (and other states) to comply with continuing education requirements for professional licensing renewal or reinstatement. Professionals always have the responsibility to determine the relevance of any class to their areas of practice.

## ESI's Learning Management System (LMS)

### To Create an Account:

1. Go to <https://learn.esinova.org>.
2. In the top right corner, click **Register**.
3. Fill in information and click **Create** my new account.
4. Check your email for the confirmation link. Click the link, then click Continue in the window that opens.
5. After creating an account, use your username and password to login LMS and enroll in courses.

### To Enroll in a Course:

1. Log in to <https://learn.esinova.org>.
2. On the left side, under Dashboard, click **Courses**.
3. Click the **year**.
4. Click the class **category**.
5. Click the **class** in which you wish to enroll.
6. Click the green **Enroll Me** button.

You will receive an email confirming your enrollment.

### To Cancel Enrollment:

1. Log in to <https://learn.esinova.org>.
2. On the left side, under Dashboard, click **My courses**.
3. Click the **class** from which you wish to unenroll.
4. Under Administration, click **"Unenroll me from (class number & name)."**
5. To confirm, click Continue or Cancel.

## **Class Administration**

### **Attendance**

To ensure consistent compliance with its Commonwealth of Virginia charter to provide quality educational programs, ESI must verify attendance of individuals at all classes. This requires maintaining an auditable system of attendance validation. For in-class instruction, ESI uses sign-in and sign-out rosters at the beginning and end of classes to accomplish this. For online classes, attendance is also taken, and a class quiz or evaluation returned to the ESI Education Department upon completion to verify class participation. Consequently, those enrolled in a class are requested to avoid conflicts which may require them to arrive late or leave early. Some LDE classes are designated as REQUIRED due to immersive hands-on and interactive/instructional design work and consequently, cannot usually be made up.

### **Cancellation Fees**

Individuals who must miss a class are requested to cancel their enrollment **at least one business day in advance of the class**. Instructions for canceling a class are on page seven. Those who fail to do so will be charged a \$75 administrative fee to defray the resulting cost.

### **LDE Class Assessments**

Assessments are important instruments administered during ESI classes to determine participant success understanding main points of presentation and achieving learning objectives. These assessments may be comprised of, although are not limited to, quizzes, online polling, practical exercises, group work, presentations, and exams.

### **Make-Up Fee**

A \$75 administrative fee will be charged to fulfill make-up scheduling to meet annual education requirements for maintaining DPE/DPE-eligible status. This fee will defray additional time and expense incurred to produce make-up classes.

**Descriptions:** Class descriptions are general representations of content and level of material intended for presentation. Exact information addressed is a function of each instructor's expertise and determination of instructional best practices. Most ESI classes



comprise lectures, interactive group activities, practical exercises, and assessments. As part of quality assurance, and to offer certain makeup classes, ESI may deploy video/audio recording devices during instruction and activities. Unauthorized recording by participants is not allowed.

**Dates:** Dates published for classes are projected dates courses are scheduled to occur. Various circumstances beyond the control of ESI occasionally necessitate that a class be rescheduled or canceled. In the rare instance that either is required, staff will alert those enrolled as early as possible.

**Time:** All PD and LD classes begin at 3:30 p.m., unless otherwise scheduled. Site visits typically begin at 1 p.m.

**Location:** All LDE classes are in-person. PD classes may be in-person, hybrid or held virtually.

ESI Headquarters:  
**4795 Meadow Wood Lane— Suite 115 East**  
**Chantilly, VA 20151**

Online classes will be conducted via ZOOM. Invitations to participate via ZOOM are sent out one day prior to class.

Due to the nature of online classes, some classes may be fully completed before the scheduled end-of-class time and will be ended accordingly. Students will be granted the full scheduled time (in most cases 3 PD hours), despite receiving the instructions within a condensed time frame.

**Site Visits:** Professional development classes which are labeled site visits will take place from 1-4 p.m.

## 2023 Education Program Course Fees

### Class Fee Schedule

<u>Program</u>	<u>Members</u>	<u>Non-members</u>
<b>Fundamentals of Land Development (F100 series)</b>	\$1,050	\$1,875
<b>Land Development Engineering (L100 and L200 series)</b>		
For credit toward DPE-eligibility:		
Semester 1	\$1,875	\$3,750
Semester 2	\$1,875	\$3,750
<b><u>Jurisdiction (per County) (L300 series)</u></b>	<b><u>\$1,000</u></b>	<b><u>\$1,875</u></b>
<b>Total Course Fee</b>	<b>\$4,750</b>	<b>\$9,375</b>
 Piecemeal Classes* (per class)	 \$290	 \$625

*\*May be taken for informational purposes but may not be applied toward DPE or DPE-eligible status.*

### **Professional Development Consortium (P500 series)**

All Classes *	\$290	\$625
Symposium	\$220	\$435

*\*Member organizations earning non-DPE educational credits may use their credits for these classes. For details, please contact ESI.*

### **DPE Fees**

One Jurisdiction	\$1,000	\$1,875
Two Jurisdictions	\$1,290	\$2,500
Three Jurisdictions	\$1,475	\$3,125

*Note: DPE fees shown include all required P500 classes and one P600 Policy and Procedure class per jurisdiction.*

Fees updated 9/23/2022

## **Land Development Engineering (LDE) – L100 and L200 Series**

### **Designated Plans Examiner (DPE), DPE-eligible and Plans Review Specialist (PRS) Certification Differences**

Engineers and Surveyors Institute (ESI) operates under a Commonwealth of Virginia charter to promote the production of quality engineering plans and the expedited plan review process in jurisdictions throughout Virginia. DPE status verifies that the holder is competent in design, preparation and submission of land development plans, thus allowing participation in an expedited process not available to non-certified practitioners.

### **Enrollment and Attendance in LDE**

Those who enroll in the Land Development Engineering program may not miss more than one class per semester and must attend all classes and appropriate Jurisdiction update to receive credit for the program. Any additional missed classes, eligible for makeup, must be completed prior to the end of that semester. In some cases, with REQUIRED classes, it may not be possible to complete a missed class until the following year.

Semester 1 (L100), is scheduled January through May, and Semester 2 (L200), is scheduled September through December. Although either semester may be taken first, the two-semester format is offered as a complete program and all seeking to establish DPE-eligibility must enroll in both semesters. Each **Jurisdiction** (L300) course will occur after Semester 2, in December.

### **Assessment Requirements to Begin the DPE Application Process**

Participants enrolled in the Land Development Engineering program are administered assessments throughout the program. These include class quizzes, practical exercises, group work and portfolio. A student who fails to satisfactorily demonstrate understanding of the main points and achievement learning objectives of a class, as assessed by the instructor, may be required to repeat that class. A final exam is given at the end of each semester. Students must pass both final exams and turn in a portfolio to successfully complete this program.

## **DPE, DPE-eligible and PRS Certification Differences**

Through ESI's Land Development Engineering program, three levels of certification are offered: Designated Plans Examiner (DPE), DPE-Eligible and Plans Review Specialist (PRS).

- **DPE-Eligible:** An individual who has completed LDE Series 1 and 2 and taken the corresponding Jurisdiction Series L300 course, but who has not yet applied for and/or been approved as a DPE, is considered "DPE-Eligible."
- **DPE-Certified:** An individual who has completed LDE Series 1 and 2 and taken the corresponding Jurisdiction Series L300 course, and has applied for, been approved, and has received a DPE number, is considered "DPE-certified" and is simply referred to as a DPE.
- **PRS-Certified:** (Loudoun County only) This is an alternative certification for individuals who meet DPE-eligible status, but do not hold a civil engineering degree.

## **Applying to Become DPE or PRS Certified**

Before applying to obtain DPE or PRS certification, professionals must meet the following criteria:

1. Possess a BS degree in Civil Engineering (or a related field) or at least six years of experience in plan design or review.
2. Complete the Land Development Engineering program L100 and L200 series
3. Complete appropriate Jurisdictional L300 Series coursework.
4. Perform three peer reviews in the appropriate jurisdiction(s)—two "first submissions" and one "second submission."
5. Accrue two years of plan design or review experience in the appropriate jurisdiction(s)—which meets the approval of the appropriate APE Board(s). This is in addition to the six years required in lieu of a degree in civil engineering or a related field.

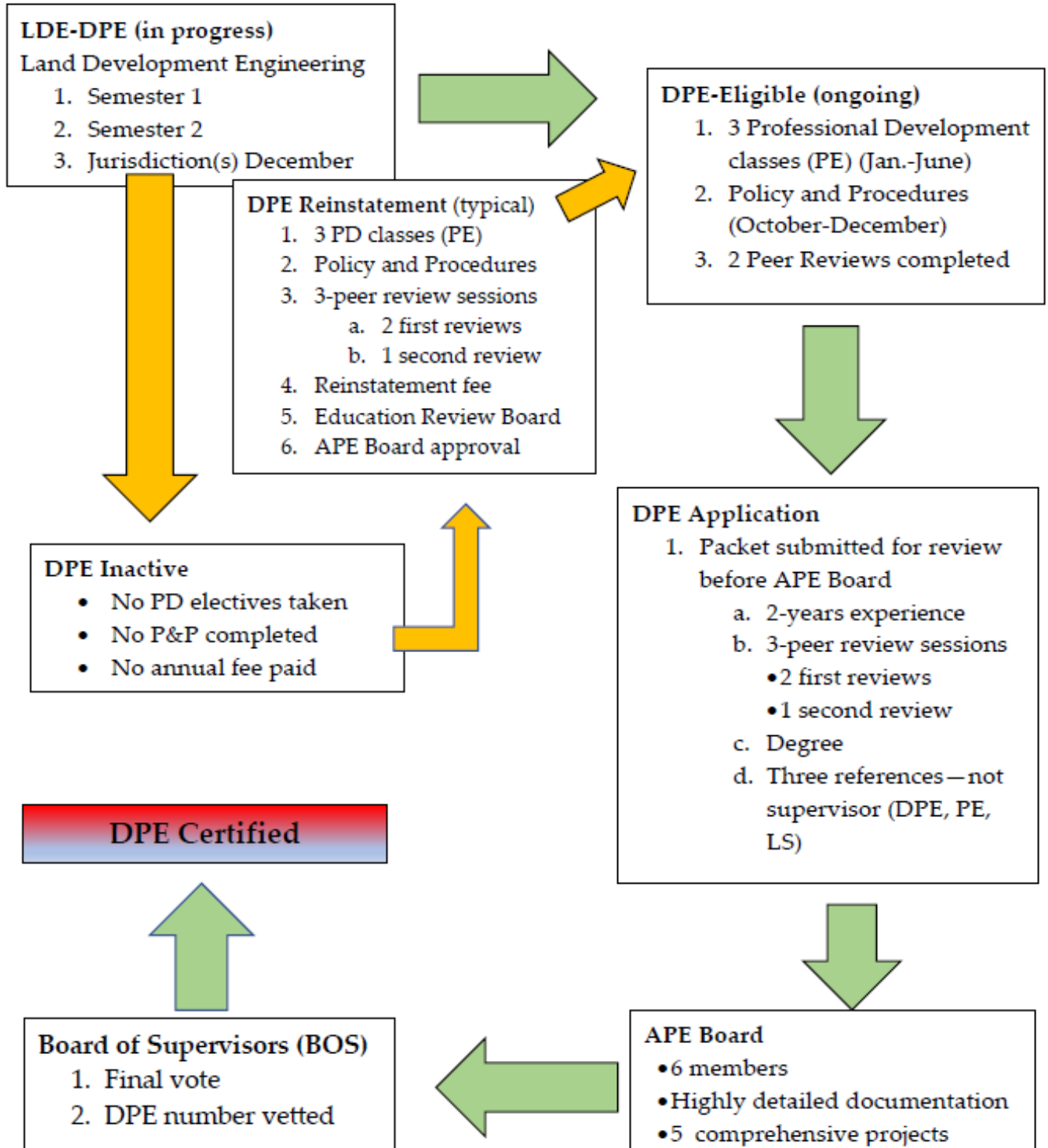
## **DPE and DPE-Eligible Annual Education Requirements**

Effective January of the year after successful completion of the LDE program, members must maintain DPE and DPE-Eligible status by:

1. Completing three Professional Development L500 series classes in subjects relevant to plan design, preparation, submission process or surveying, and business management.
2. Completing Policy & Procedures Update P600 Series for *each* jurisdiction in which the member is eligible/certified.
3. Performing two **peer reviews** for *each* jurisdiction in which the member is eligible/certified. Timesheets must be turned in to validate completion.

# Designated Plans Examiner (DPE) Process

Engineers & Surveyors Institute



## **Fundamentals of Land Development in Northern Virginia**

This two-day course helps practitioners new to Northern Virginia understand the practical side of land development process as it occurs in one of the busiest regions in the state. This orientation course will give professionals basic information they need to quickly become productive employees in a practical application environment.

Some topics to be covered:

- Overview of Plan Review Process in Fairfax & Loudoun Counties (including County Codes & Ordinances & Public Facilities Manual),
- Wetlands and Environmental Quality Corridors (EQC),
- Sanitary Sewers, Septic Systems and Plan Design Topics with Local & State Officials. Virginia Stormwater Management Program & VRRM Spreadsheet,
- Erosion & Sediment Control updates,
- Urban Forestry,
- Water Authority,
- Fire Regulations, & Transportation.

Enrollment includes all classes on both days. Due to the nature and extent of the Fundamentals class, ESI does not allow makeup sessions.

<b>F101-22</b>	Fairfax County Fundamentals of Land Development	TBD
<b>F102-22</b>	Loudoun County Fundamentals of Land Development	TBD

## **Land Development Engineering (LDE) Designated Plans Examiner (DPE) Program (L100 and L200 series)**

Engineers and Surveyors Institute (ESI) operates under a Commonwealth of Virginia charter to promote the production of quality engineering plans and the expedited plan review process in jurisdictions throughout Virginia. DPE status verifies that the holder is competent in design, preparation, and submission of land development plans, thus allowing participation in an expedited process not available to non-certified practitioners.

This two-semester program is uniquely designed to provide students with basic operating knowledge of procedural and technical aspects for accomplishing plan approval in Northern Virginia land development processes. Classes address all practical aspects of land development, often including interactive exercises.

Participants must successfully complete both semesters and the appropriate Jurisdictional course to establish DPE-eligibility. Land Development Engineering classes do not qualify as PD Electives.

Participants will exit this program as DPE-Eligible and then apply to become DPE certified.

## Land Development Engineering—Semester 1 (L100 series)

L101-23	<b>The History of Northern Virginia Land Development</b> Tuesday, January 10	3:00—6:30 p.m.
L102-23	<b>Evolution of Land Development</b> Tuesday, January 17	3:30—6:30 p.m.
L103-23	<b>Roles &amp; Responsibilities of Key Players</b> Tuesday, January 31	3:30—6:30 p.m.
L104-23	<b>Environmental Issues</b> Tuesday, February 7	3:30—6:30 p.m.
L105-23	<b>Survey Mapping &amp; Subsurface Utility Engineering</b> Tuesday, February 14	3:30—6:30 p.m.
L106-23	<b>Comprehensive Planning &amp; Zoning</b> Tuesday, February 21	3:30—6:30 p.m.
L107-23	<b>Geometric Site Layout I *</b> Tuesday, February 28	3:30—6:30 p.m.
L108-23	<b>Geometric Site Layout II *</b> Tuesday, March 7	3:30—6:30 p.m.
L109-23	<b>Street Design I</b> Tuesday, March 14	3:30—6:30 p.m.
L110-23	<b>Street Design II</b> Tuesday, March 21	3:30—6:30 p.m.
L111-23	<b>Grading &amp; Earthwork</b> Tuesday, March 28	3:30—6:30 p.m.
L112-23	<b>Tree Conservation Plan Preparation</b> Tuesday, April 11	3:30—6:30 p.m.
L113-23	<b>Floodplain Studies</b> Tuesday, April 18	3:30—6:30 p.m.
L114-23	<b>Drainage Outfalls</b> Tuesday, April 25	3:30—6:30 p.m.
L115-23	<b>Semester 1 Exam</b> Tuesday, May 2	3:30—6:30 p.m.

*\* This is a hands-on design class and has a mandatory attendance requirement.*



## Land Development Engineering—Semester 2 (L200 series)

L201-23	<b>Storm Drainage Design</b> Tuesday, September 5	3:30—6:30 p.m.
L202-23	<b>Stormwater Planning</b> Tuesday, September 12	3:30—6:30 p.m.
L203-23	<b>Stormwater Management—Quality</b> Tuesday, September 19	3:30—6:30 p.m.
L204-23	<b>Stormwater Management—Quantity</b> Tuesday, September 26	3:30—6:30 p.m.
L205-23	<b>Utilities—Wastewater Design</b> Tuesday, October 3	3:30—6:30 p.m.
L206-23	<b>Utilities—Water Distribution</b> Tuesday, October 10	3:30—6:30 p.m.
L207-23	<b>Erosion &amp; Sediment Control</b> Tuesday, October 17	3:30—6:30 p.m.
L208-23	<b>Utilities—Dry Utilities*</b> <i>Tuesday, October 24</i>	3:30—6:30 p.m.
L209-23	<b>Site Design Process: Steps &amp; Procedures *</b> <i>Tuesday, November 7</i>	12:30—6:30 pm**
L210-23	<b>Site Design Process: Steps &amp; Procedures *</b> <i>Tuesday, November 14</i>	12:30—6:30 pm**
L211-23	<b>Document Production—What &amp; How?</b> Tuesday, November 28	3:30—6:30 p.m.
L212-23	<b>Engineer's/Surveyor's Roles During Construction</b> Tuesday, December 5	3:30—6:30 p.m.
L213-23	<b>Final Exam Semester 2</b> Tuesday, December 12	3:30—6:30 p.m.

\* Hands-on design class—mandatory attendance requirement.

\*\*Hands-on design class—see attendance hours.

## Land Development Engineering—Jurisdiction (L300 series)

### L310-23 Fairfax County Jurisdiction

**Wednesday, December 6**

3:30—6:30 p.m.

This course will be presented virtually. Registration in LMS required. Participants are required to take this course for DPE-eligible status.

Topics included:

- LDS Introduction
- Planning Process
- Zoning Ordinance
- Site Plans/Subdivisions/Infill Lots
- Peer Review
- Customer & Technical Support Center
- Stormwater Code & Regulations
- Tree Conservation Ordinance
- Expedited Review

### L320-23 Loudoun County Jurisdiction

**Thursday, December 14**

3:30—6:30 p.m.

This course will be presented virtually. Registration in LMS required. Participants are required to take this course for DPE-eligible status.

Topics included:

- Welcome to Loudoun County, Zoning
- Legislative Process
- Subdivision Process
- Site and Construction Plan Process
- Bonding Process
- Expedited Review

## Professional Development Consortium—*At A Glance* (P500 series)

P501-23	<b>History of Land Development in Northern Virginia</b> <b>Tuesday, January 10</b> 3:30—6:30 p.m. Online
P502-23	<b>Tree Preservation, Biology and State Guidelines</b> Thursday, January 12 3:30—6:30 p.m. In-person and online
P503-23	<b>Washington Metropolitan Airports Authority (MWAA)—IAD Engineering Update</b> Thursday, January 19 3:30—6:30 p.m. In-person and online
P504-23	<b>International Airport Dulles (IAD)—MWAA Site Visit</b> Thursday, February 2 1:00—4:00 p.m. In-person
P505-23	<b>United States Geological Survey (USGS)—Future Trends</b> Thursday, January 19 3:30—6:30 p.m. In-person and online
P506-23	<b>Scoping in Civil Engineering—Personnel and Time Allocations</b> Thursday, February 16 3:30—6:30 p.m. Online
P507-23	<b>Ancient Roman Empire Design—Roots in Civil Engineering</b> Thursday, February 23 3:30—6:30 p.m. Online
P508-23	<b>Transportation Safety</b> Thursday, March 2 3:30—6:30 p.m. Online
P509-23	<b>Tyson’s West Pump Station—Research and Implementation</b> Thursday, March 9 3:30—6:30 p.m. In-person and online
P510-23	<b>WMATA Silver Line Site Visit</b> Thursday, March 16 1:00—4:00 p.m. In-person
P511-23	<b>Constructability Review</b> Thursday, April 27 3:30—6:30 p.m. In-person and online
P512-23	<b>Strength-Based Leadership</b> Thursday, April 27 3:30—6:30 p.m. In-person
P513-23	<b>Land Surveying and Metadata—Where are We Going?</b> Thursday, May 11 3:30—6:30 p.m. In-person and online
P514-23	<b>Focus Group Workshop</b> Thursday, May 18 9:00 a.m.—1:00 p.m. In-person ( <i>lunch included</i> )
P515-23	<b>DEQ Stormwater Management Solar Requirements</b> Thursday, June 15 3:30—6:30 p.m. Online

## Professional Development Consortium (P500 series)

### P501-23 **History of Land Development in Northern Virginia**

*Instructor: Andrew A. Painter, Walsh Colucci Lubeley & Walsh, P.C*

ESI opens the 2023 Education Consortium with this popular, all-encompassing, fact-packed historical trip through Northern Virginia land development. History of economy and real estate sectors of the NOVA region are discussed, starting with industries that first developed during colonial era through early part of the twentieth century. The instructor also provides a glimpse of the explosive growth and construction that began in the 1930s and accelerated development after World War II through today. A comprehensive look at impacts of change in infrastructure, transportation, local regulations, land use policies, and growth of federal government influences are outlined. Painter takes the learner through a fact-based learning experience and open eyes to 300 years of change.

**Tuesday, January 10**

**3:30—6:30 p.m. Online**

### P502-23 **Tree Preservation, Biology and State Guidelines**

*Instructor: Dr. Jim McGlone, Virginia Department of Forestry*

This class will help participants understand the issue of tree canopy decline throughout the region and identify steps engineers can apply in planning community projects to support best practices and forestry research.

- Designing to maximize tree preservation
- Avoiding tree preservation deviation request if possible
- Best Construction practices
- Designing and building to save trees
- Lessons learned
- Which species to use and what plants are not appropriate

**Thursday, January 12**

**3:30—6:30 p.m. In-person and online**

**P503-23 Metropolitan Washington Airports Authority(MWAA)— IAD Engineering Update**  
*Instructor: Roger Natsuhara, SVP MWAA Civil Engineering*

The Metropolitan Washington Airports Authority (MWAA) operates Ronald Reagan Washington National Airport (DCA), Washington Dulles International Airport (IAD), the Dulles Airport Access Highway, and the Dulles Toll Road. In the past, MWAA managed construction of the Silver Line project—a 23-mile extension of the Washington region’s Metrorail public transit system through Fairfax County and into Loudoun County, Virginia. As of June 23, 2022, Washington Metropolitan Area Transit Authority (WMATA) announced that it had taken over control of the Phase 2 project from the MWAA.

Specifically, this class will highlight all civil engineering endeavors including demand capacity forecasts, stormwater management, erosion and sediment, and dry utility master plans. Baggage conveyance systems and modernization of facilities will be highlighted as well.

Mr. Natsuhara has more than 25 years of experience in engineering, construction and acquisition management. Natsuhara oversees the \$1 billion Reagan National Airport improvement program, which includes the construction of a new concourse to replace 14 outdoor regional aircraft boarding areas and the relocation of security checkpoints in the B/C Terminal to allow passengers post-security connectivity between the terminal gates. Prior to joining MWAA, Natsuhara served as principal advisor to the Secretary of the Navy for installations, energy projects, environmental and safety concerns. He also held a senior leadership position for the National Oceanic and Atmospheric Administration, where he managed property and facilities.

**Thursday, January 19**

**3:30—6:30 p.m. In-person and online**

**P504-23 International Airport Dulles (IAD)—MWAA Site Visit**

*Instructors: Sophie Ji, Thomas Beatty, Andrew Hascall, Keith Autry, Roger Natsuhara*

An informative site visit to IAD highlighting sustainability initiatives for future development, land use compatibility, economic development opportunities, discussion of environmental impacts, and emerging technologies. What happened to the people movers? How has the Silver Line affected future planning? How to plan demand capacity forecasts are highlighted with discussion of stormwater management, erosion

and sediment, and dry utility master plans. Baggage conveyance systems and modernization of facilities will be toured.

**Thursday, February 2**

**1:00—4:00 p.m. In-person**

**P505-23 United States Geological Survey (USGS)—Future Trends**

*Instructor: Mike Tischler, Ph.D., Director of National Geospatial Program, USGS*

This class will highlight:

- Framework that FEMA and related agencies base policy and make directives which affect local governments. (100 year flood, etc.)
- USGS programs in operational topographic map production, collection, and dissemination of a national lidar program.
- Creating networking initiatives and links to infrastructure efforts to maintain a national hydrography dataset for use by Federal, State and local governments.
- Future visions for integrated topographic data.
- Use of USGS data in infrastructure planning.

The National Geospatial Program (NGP) at the U.S. Geological Survey (USGS), provides the digital geospatial foundation for the United States and is responsible for designing, planning and executing the national topographic mapping program. Dr. Tischler provides management oversight and direction to the NGP, including The National Map, the National Geospatial Technical Operations Center, the 3D Elevation Program, the National Hydrography Dataset, the US Topo Map Series, research activities performed at the Center of Excellence for Geospatial Information Science (CEGIS), and geospatial data and information in response to natural disasters. Dr. Tischler also serves as the Department of the Interior representative to the Domestic Names Committee of the U.S. Board on Geographic Names. Prior to joining the USGS, Dr. Tischler worked as the U.S. Army Corps of Engineers Geospatial Research Laboratory in Alexandria, VA providing strategic and technical oversight to a variety of basic and applied geospatial research projects.

**Thursday, February 9**

**3:30—6:30 p.m. In-person and online**

**P506-23      Scoping in Civil Engineering—Personnel and Time Allocations**  
*Instructor: Dr. Gary Blank, NCSU, Associate and Alumni Distinguished Undergraduate Professor, Director of Undergraduate Programs*

With the guidance of a unique facilitator, participants will identify current constraints on the scope of civil engineering—developing, designing, planning, calculating, monitoring construction as well as executing and managing the construction of buildings, roads and physical structures.

This class is focused on a review of scoping's essential role in defining issues and the results of scoping that affect personnel and time allocations. Also discussed, National Environmental Policy Act (NEPA)—a national policy for environmental impact, created the Council on Environmental Quality (CEQ), which makes recommendations for State providers such as VA DEQ. NEPA was the first major environmental law in the United States and is often called the "Magna Carta" of Federal environmental laws. NEPA requires Federal agencies to assess the environmental effects of proposed major Federal actions prior to making decisions. Stormwater management, erosion and settlement control will also be related to State of Virginia environmental review process, Virginia Environmental Impact Report Procedure (VAEIR), which is aligned with NEPA.

**Thursday, February 16**

**3:30—6:30 p.m. Online**

**P507-23      Ancient Roman Empire Design—Roots in Civil Engineering**  
*Instructor: Dr. Bill Hunt, NCSU, William Neal Reynolds Distinguished University Professor & Extension Specialist*

Much of our current water infrastructure traces its roots to the Roman Empire. Moreover, some of the greatest monuments from antiquity that survive today are colossal aqueducts that lace the old Roman Empire. Please join the unabashed water & Roman guy, Dr. Bill Hunt, as he explores how Roman engineers planned, designed, and maintained water infrastructure including aqueducts, water delivery systems, reservoirs, and drainage. Their philosophies are compared to what we use today when researching wastewater, stormwater and erosion and sediment constraints.

Dr. Hunt will further discuss Americans' love of entertainment traces its roots to antiquity. While many cultures valued entertainment (e.g., the Greeks), the peak of entertainment infrastructure occurred during the Roman Imperial era. Theaters, amphitheaters, and horse racing (the circus) were standard fare for Roman fun. Explore how the Romans engineered entertainment both in Rome and throughout the empire.

Participants will learn how much Roman civil engineering thought survives today in current large entertainment spaces.

Since 2000, Hunt has assisted with the design, installation, and/or monitoring of over 150 stormwater control measures (SCMs), including bioretention, stormwater wetlands, innovative wet ponds, green roofs, permeable pavement, water harvesting/cistern systems and level spreaders. He teaches 20-25 short courses and workshops each year on stormwater design, function, and maintenance throughout North Carolina and the United States.

**Thursday, February 23**

**3:30—6:30 p.m. Online**

**P508-23      Transportation Safety**

***Instructor: Dr. Kun Xie, Assistant Professor, Department of Civil & Environmental Engineering, Old Dominion University***

Join us in welcoming Dr. Kun Xie, as he guides participants through a basic understanding of R programming language and transportation safety modeling--how it relates to developing trends in economic development, the future of engineering capabilities and hiring qualified individuals.

His instructional interests include transportation safety, transportation reliability and resilience, incident/emergency management, transportation planning and management, connected and autonomous vehicles, and intelligent transportation systems. His research provides local policymakers with the data needed to implement safety-related changes for transportation.

**Thursday, March 2**

**3:30—6:30 p.m. Online**

**P509-23      Tyson's West Pump Station—Research and Implementation**

***Instructors: Bill Barrack and Katharine Sager, Fairfax County***

A discussion and review of Fairfax Virginia's Best Management Practices (BMP's) for dealing with excess wastewater flow. Fairfax County researched future flow projections and compared them to existing capacity of pipes, pump stations, and treatment systems. The study showed that facilities in northern Fairfax County had insufficient capacity to handle future flow. Based on this research, wastewater flows from northern



Fairfax County will be pumped to the Noman Cole Pollution Control Plant wastewater treatment facility in Lorton VA. To transport the flows to the treatment facility, Fairfax County has developed three main components of transmission infrastructure: a gravity sewer pipeline, a pump station, and a force main—a pressurized pipeline.

**Thursday, March 9**

**3:30—6:30 p.m. In-person and online**

**P510-23 WMATA Silver Line Site Visit**

*Instructors: TBA*

In collaboration with MWAA’s Dulles IAD expansion, the WMATA’s newly opened Silver Line offers a look at new economic development and enhanced access to the Fairfax-Loudoun corridor.

WMATA celebrated the opening of the Silver Line Extension on November 15, 2022, connecting customers to six new stations, adding 11.4 miles of track to the Metrorail system, and beginning operations at a modern rail maintenance facility. The Silver Line Extension provides customers with a new connection to Washington Dulles International Airport, as well as service between Reston, VA, and eastern Loudoun County. The grand opening also marks the completion of the Silver Line project, a generational infrastructure investment in Northern Virginia. Six new Metrorail stations are part of this expansion offering further economic development:

- Reston Town Center
- Herndon
- Innovation Center
- Washington Dulles International Airport
- Loudoun Gateway
- Ashburn

As one of the largest capital construction projects in the United States, the Silver Line provides high-quality, high-capacity transit service between the Dulles corridor and Downtown D.C., expands the reach of the existing regional rail system, offers a viable alternative to automobile travel, and supports future development. The Silver Line Extension also includes a brand-new rail maintenance and service yard, located on 90 acres of the Washington Dulles International Airport property. The Dulles Rail Yard is the largest rail yard in the Metro system and employs approximately 450 people.

**Thursday, March 16**

**1:00—4:00 p.m. In-person**

**P511-23      Constructability Review**

*Instructors: Michael Trabucco and Deborah Harvey, HCCA*

Constructability review is a process that utilizes construction personnel with extensive construction knowledge early in design stages of projects ensuring projects are buildable, cost-effective, biddable, and maintainable.

Join subject matter experts from Heavy Construction Contractors Association (HCCA), as they provide a Northern Virginia approach to constructability review. Participants are encouraged to make connections and establish working relationships with HCCA personnel as they discuss each step of review.

Constructability reviews normally are comprised of five common phases:

1. Structural
2. Building Envelope,
3. Interior Architectural,
4. MEP
5. Sitework

**Thursday, April 20**

**3:30—6:30 p.m. In-person and online**

**P512-23      Building a Strengths-Based Culture**

*Instructor: Ellen Gray, Fairfax County*

This class is limited to 24 participants.

Prior assignment required.

Through learning experiences offered in this workshop, you will discover your natural strengths and how to leverage them to build strength-based teams, increase employee engagement and retention and improve organizational performance. By the end of the workshop, you will have developed unique strategies to build your strengths-based culture.

This andragogical concept leads to greater team cohesion, as team members complement one another rather than compete for the same "territory." It will also produce a diverse team, with a wider range of strengths, skill sets, attitudes, and cultural values.

A unique access code (enclosed in the back of this book) allows you to take the leadership version of Gallup's StrengthsFinder program. This program provides specific

strategies for leading with your top five strengths and enables you to plot strengths of your team based on the four domains of leadership strength revealed in the book.

The cost of text is covered by ESI. Participants are to bring assessment results to class.

Rath, T. (2008). *Strengths-Based Leadership: Great Leaders, Teams, and Why People Follow*. Gallup Press.

**Thursday, April 27**

**3:30—6:30 p.m. In-person**

**P513-23 Land Surveying and Metadata—Where are We Going?**

*Instructor: Sean Peiffer*

Offered as a follow-up to P505-23 United States Geological Survey (USGS)—Future Trends, this informative class provided by one of ESI’s top subject matter experts, Sean Peiffer, reviews boundary surveys, topographic surveys, site plans and trends in Metadata for future surveying.

Metadata describe information about data, including who, what, where, when, why, and how, so that it can be understood, re-used, and integrated with other data.

Metadata records follow a standard format to enable interoperability, similar to Extensible Markup Language (XTM). Metadata are used for enabling data discovery, understanding data, analysis and synthesis, maintaining longevity of data, tracking progress of research projects, and demonstrating returns on investments.

**Thursday, May 11**

**3:30 – 6:30 p.m. In-person and online**

**P514-23 Focus Group Workshop**

*Facilitator: ESI Educational Staff*

This critical four-hour workshop helps develop ESI’s Professional Development curriculum for the next academic year. Under the direction of the Chair of the Education Committee, participants will consider classes suggested by ESI’s membership and consolidate them into a prioritized list of courses, identifying class titles, topics to be covered, and subject matter experts. Participants are subject to approval by ESI’s Director of Education, Education Committee, and/or Executive Director to ensure

sufficient knowledge base of ESI curriculum and adequate representation from both the public and private sectors.

**Thursday, May 18**

**9:00 a.m. – 1:00 p.m. (includes lunch) In-person**

**P515-23 DEQ Stormwater Management Solar Requirements**

*Instructor: Dr. Jan Briedé, Virginia DEQ*

Join returning instructor, Dr. Jan Briedé, who will provide guidance, interpretation and recommendations for newly released DEQ's Stormwater Management Solar Requirements memorandum.

On March 29, 2022, Michael Rolband, the director of the Virginia Department of Environmental Quality (DEQ), issued a memorandum implementing a new and more stringent post-development stormwater management policy for solar projects that are subject to Virginia Stormwater Management Program (VSMP) requirements related to Virginia Pollutant Discharge Elimination System (VPDES) permitting for construction activity-related stormwater discharges.

DEQ infers that the new policy does not prohibit any alternative method of demonstrating the water quantity and water quality impacts of solar panels and any such proposal “will be reviewed and accepted or denied based on the technical adequacy and compliance with the appropriate laws and regulations.” DEQ staff are preparing implementation guidance for the new policy, though it is not clear when such guidance will be issued.

Solar project developers should consider the implications of the new policy for their planned or ongoing projects, especially for those for which site acquisition and engineering work are underway but have not had their SWM plans approved by March 29, 2022. Also unclear is whether any needed modification of an already approved SWM plan would cause the entire project to become fully or partially subject to the new policy.

**Thursday, June 15**

**3:30 – 6:30 p.m. Online**

## Policy and Procedure Classes (P600 series)

These classes feature local and state officials who will address the changes to plan design and review policies, regulations, ordinances, and procedures occurring during the past 12 months within their jurisdictions. They may also include information about the types of jurisdictional resources available, Internet links, common mistakes on plans, and unwritten policy practices. DPEs and DPE-eligibles are required to take the classes for all jurisdictions in which they maintain DPE status. **These sessions are typically scheduled in the fall, and members will be notified by email when they are available for enrollment.** (Instructions for enrollment in these classes will be attached.) (P&P Classes do not qualify for credit as PD Electives.)

**P611-23 Fairfax County P&P Update**

**Thursday, October 19**

**3:30—6:30 p.m. Online**

**P621-23 Loudoun County P&P Update**

**Thursday, October 12**

**3:30—6:30 p.m. Online**

**P631-23 Prince William County P&P Update**

**Thursday, October 26**

**3:30—6:30 p.m. Online**

## Symposia and Seminars (P700 series)

ESI periodically offers seminars and symposia as rapidly developing opportunities for current technology or process information updates intended to provide responsive access to the membership. They are typically concentrated, fast-paced and information distribution oriented, affording members a comprehensive conduit to the latest techniques and requirements surfacing in the land development arena. Members will be notified by email when such classes are available. As information distribution conduits, symposia or seminars may not qualify for credit as a PD Elective.

## **Alternate Educational Opportunities (P800 and P900 series)**

Some alternate educational opportunities may qualify for credit as PD electives if appropriate approval is granted by ESI.

ESI's acceptance of any of the following "Alternate Educational Opportunities" as one of three annually required PD Electives to maintain DPE status does not guarantee its approval as credit for continuing education units (CEUs) or professional development hours (PDHs) in State professional license renewal/reinstatement.

### **Guidelines for Acceptance of an Alternate Educational Activity—other than class attendance—for credit as a PD elective (See P900-23 for information on Alternative Class Participation )**

Members may (with appropriate ESI approval) receive continuing education credit for an elective under the Professional Development Consortium by participating in an educational activity—other than class attendance—that meets the following criteria:

1. Has a stated content area, purpose, and observable and measurable objectives
2. Provides for the maintenance, improvement, or expansion of professional skills and knowledge in land development
3. Has an established duration

Members interested in participating in an alternate activity for PD elective credit should contact the Director of Education for further information before participating.

Any alternate educational opportunity tentatively approved for credit as a PD elective will require the member to submit evidence of successful completion of the activity to the Director of Education before final approval is granted.

### **P800-23 Participation in a Technical or Process Study**

Members may perform study research and coordination regarding a topic identified by the Executive Director. This study shall include a study plan that identifies a statement of objectives, desired result product, and work schedule. The study shall have a final report identifying the work process and study results. The member shall provide the format outline for proposed study to the Executive Director no later than 30 days after enrolling in this class.

### **P801-23 Participation in a Jurisdiction Support Study**

Members participating in support efforts for jurisdictions, as identified by the Executive Director, may enroll in this class. Credit is contingent on meeting product and attendance requirements identified by the Executive Director.

**P802-23      ESI Executive Committee**

Executive Committee members may enroll in this class. Credit is contingent on meeting product and attendance requirements identified by the Executive Director.

**P803-23      Technical Issues Study—Leesburg**

Members of the Technical Issues Study—Leesburg Committee may enroll in this class. Credit is contingent on meeting product and attendance requirements identified by the Executive Director.

**P804-23      Education Review Committee**

Education Review Committee members may enroll in this class. Credit is contingent on meeting product and attendance requirements identified by the Director of Education.

**P805-23      Advisory Plans Examiner Board (APEB)**

Advisory Plans Examiner Board members may enroll in this class. Credit is contingent on meeting product and attendance requirements identified by the Executive Director.

**P810-23      Engineering Standards Review Committee (ESRC)**

Engineering Standards Review Committee members may enroll in this class. Credit is contingent on meeting product and attendance requirements identified by the Executive Director.

**P900-23 Series Guidelines for Alternative Class Participation**

If a member seeks approval to use participation in an alternate class as credit for one of three annually required electives to maintain DPE status, the member shall provide the following to the Director of Education, who may refer it to the Education Committee for review:

1. Evidence that class is from an accredited academic institution or an institution that is state or federally certified as a continuing education credit provider/sponsor.
2. The course description and learning objectives of alternative class, which shall address a topic comparable to one addressed by ESI classes.
3. If the course is tentatively approved as an acceptable alternate class, the member will also provide evidence of successful completion of the course to the Director of Education before final approval to receive credit is granted.

**P910-23 ESI Instruction (ESI Instructors Only)**

An ESI instructor who teaches a block of instruction in any of the ESI Education Programs in the current year may enroll in this class. Instructors may enroll in P910 only once per year. Approval by the Director of Education is required.

**P920-23 ESI Curriculum Development (ESI Instructors Only)**

An ESI instructor who develops a new block of instruction, or substantially updates one, in any of the ESI Education Programs in the current year may enroll in this class. Instructors may enroll in P920 only once per year. Approval by the Director of Education is required.