

## Workshop: **Introduction to LID and LEED**

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Primary Instructor: Dwane Jones

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PREREQUISITES: *None*

### COURSE OVERVIEW

Low Impact Development (LID) is typically defined as a stormwater management design framework aimed at minimizing the negative impacts of stormwater runoff. LID includes: mimicking pre-development hydrology, tree conservation, maximizing open space, maintenance, structural practices, and education.

This course addresses LID in the contexts of design, planning, implementation, and maintenance. The INTRODUCTORY course is designed for planners, engineers, landscape architects, realtors, surveyors, local governments, and anyone else interested in environmentally friendly, cost-efficient developments. Since a significant amount of material is covered during this session, the INTRODUCTORY course gives an overview of LID from a holistic perspective. One may call it a survey of LID.

Various components of LID are fragmented and discussed in more detail in other courses offered through Extension. Upon completion of this course, students should be able to engage in intellectual discussions involving LID, apply principles learned in design and review scenarios, and identify intricate components of an LID, coupled with how each component functions and contributes to the overall system.

This course consists of the following modules:

#### **MODULE 1: OVERVIEW OF LID & LEED**

- What is LID? (classical definition)
- LID and Water Quality
- Reducing impervious surface areas
- LID vs Conventional Neighborhood Development
- Overview of LEED-ND

## **MODULE 2: LID and SMART GROWTH; LID and CONSERVATION DESIGN**

- What is Smart Growth?
- What is Conservation Design?
- What should be the relationship between LID and Smart Growth?
- What should be the relationship between LID and Conservation Design?

## **MODULE 3: STORMWATER PRACTICES: ENGINEERING, PLANNING, and DESIGN**

- Common stormwater practices
- Design considerations
- Management considerations
- The “Big Picture”

## **MODULE 4: SITE PLANNING**

- What factors should be taken into consideration when planning LIDs?
- What is the relevance of these considerations?
- How do these planning considerations fit into the “hydrology” component of LID?

## **MODULE 5: ECONOMICS AND INTEGRATION**

- Economics of LID
- Case Studies
- Design Exercise and Integration

This course is the first required course in the LID CERTIFICATION series (for additional information on the LID Certification, please visit [bae.ncsu.edu/topic/lid](http://bae.ncsu.edu/topic/lid)). Following the successful completion of this course you should consider taking the POLICY course.

### **CLASS FORMAT**

The INTRODUCTORY course is usually a day and a half in length and consists of a combination of lectures, discussions, and hands-on exercises. Students are strongly encouraged to participate in all aspects of the course to the fullest extent practicable. Class participation will contribute to your final grade for the course.

### **TEXTBOOK, READINGS, and SUPPLIES**

There is one recommended book that will be used in both the INTRODUCTORY and POLICY courses: *LOW IMPACT DEVELOPMENT: A GUIDEBOOK FOR NORTH CAROLINA*. The book may be downloaded from: [http://www.ces.ncsu.edu/depts/agecon/WECO/lid/documents/NC\\_LID\\_Guidebook.pdf](http://www.ces.ncsu.edu/depts/agecon/WECO/lid/documents/NC_LID_Guidebook.pdf). There is no charge for this book; however, the book is about four hundred (400) pages in length (please keep this in mind before using a standard printer). A notebook with the PowerPoint slides for the course will be provided on the day of the scheduled workshop.

Please bring a writing instrument and pad. An architectural or engineering scale and calculator are optional. If you seek professional development credits, please bring a copy of your registration number, license, or identification.

## CERTIFICATION EXAM (*choose exam or project-based certification*)

There is a *NC LID Certification* exam that will be offered once the student has successfully completed both the INTRO and POLICY courses. This exam is offered using an online teaching tool entitled “Moodle.”

### MOODLE

Your exam may be taken and graded online. Moodle is an online program used by the University as a teaching tool. Instructions for using Moodle are cited below.

Step 1. Go to <http://moodle.wolfware.ncsu.edu/> and create a Moodle account. You will then receive an automated email asking you to "complete your registration" by clicking on a link provided in the email. When this is done, please email Cathy Smith so that she can add you to the student roster and email you your “special password” to access the exam. [Email: [cathy\\_smith@ncsu.edu](mailto:cathy_smith@ncsu.edu)]

Step 2. When you're ready to take the exam having received your special password, please log in to Moodle and click on the "BAE Extension" link.

Step 3. Click on the "NC LID Certification exam" link. Start the test.

The exam will open on \_\_\_\_\_ and close on \_\_\_\_\_. You have 3 hours maximum to take the exam. Students have two options when taking the exam: (1) save without submitting; and (2) save and submit. The "save without submitting" function does NOT stop the clock – but it is recommended that you “save” often while taking the test so as not to lose your answers in the rare occasion that the web page “times out”. The "save and submit" function completes the exam and submits it to the instructor for final grading.

If you do not complete the exam by time allotted, the system will delete your information and you will forfeit any attempts to successfully take and pass the exam. Email Dwane at [dwane\\_jones@ncsu.edu](mailto:dwane_jones@ncsu.edu), immediately upon completing the exam.

Please email Cathy at [cathy\\_smith@ncsu.edu](mailto:cathy_smith@ncsu.edu) if you have any logistical or technical issues or call her at 919-515-6780. For questions regarding content, please email Dwane Jones at [dwane\\_jones@ncsu.edu](mailto:dwane_jones@ncsu.edu).

## PROJECT-BASED CERTIFICATION (*choose exam or project-based certification*)

As of 2011, the LID Group has instituted an optional project-based certification. The goal of the project-based certification option is to produce tangible outcomes of knowledge gained during the course. Project-based certification will be discussed in detail during the INTRO and POLICY courses. Beginning with the date of the course taken by the student, project-based certification may be obtained by:

### DESIGNERS

- Produce an actual LID or LID-based design for local government approval. Detailed drawings, and any supplemental materials will be submitted to Dwane Jones for review. Projects will be reviewed on a case-by-case basis. Describe how knowledge gained in the INTRO and POLICY courses was applied.
- Other options will be reviewed on a case-by-case basis.

## LOCAL GOVERNMENT EMPLOYEES

- Submit any documentation of a plan that was submitted to the local government for approval. What recommendations did you make in regard to LID? Were they implemented? Describe how knowledge gained in the INTRO and POLICY courses was applied.
- Develop an alternative plan for a project submitted to the local government for review. The alternative plan should incorporate LID strategies.
- Work with a developer/designer to modify a conventional plan to make it Low Impact.
- Other options will be reviewed on a case-by-case basis.

## REALTORS

- Develop an LID-related informational session and accompanying educational material for homeowners. Implement informational session; send list of attendees, and a copy of educational material produced to Dwane Jones. Describe how knowledge gained in the INTRO and POLICY courses was applied.
- Other options will be reviewed on a case-by-case basis.

## OTHER

- Some workshops may have a field trip component. You will be notified beforehand if this is the case. Appropriate attire (walking shoes, etc) is encouraged.
- Future workshops, general information, and resources may be found at: [bae.ncsu.edu/topic/lid](http://bae.ncsu.edu/topic/lid).
- *Course Evaluation*- Please complete a course evaluation at the conclusion of the workshop. The data from evaluations is used to enhance the educational experience of future workshops and courses. A course evaluation will be sent to your email inbox after course completion.