

SYLLABUS | LA 313 – Landscape Architectural Engineering 3

Spring Semester 2026 | Tuesday + Thursday 9:00-11:45am | AB 210 + studio

COURSE DESCRIPTION

Principles and practices of landscape engineering and construction. Emphasizes vehicular, bicycle and pedestrian circulation; roadway, trail and parking lot design and engineering; practices of storm water management; and advanced grading. 4 credits. Prerequisite: LA 312, LA majors only.

INSTRUCTORS

Paul Maginnity, Assistant Teaching Professor, ASLA

AB 113 | paul.maginnity@bsu.edu | Office Hours: MW 11:00a-12:30p, F 10:30a-12:00p, or by appt.

Chris Marlow, Associate Professor, PLA, ASLA

AB 231 | marlow@bsu.edu | 765-285-1980 | Office Hours: MWF 8:00-10:00a, TR 1:30-2:30p, or by appt.

RATIONALE

Landscape architectural engineering is a fundamental component of landscape architecture education and training, the professional licensure exam, and professional practice. Landscape architects are responsible for preparing construction documents for implementing a wide variety of landscape/site designs. This course is designed to help develop and refine the student's knowledge and skills in the advanced planning, design, layout, documentation, and implementation of site systems and structures. The course is intended to be largely technical in nature. However, it also recognizes the synergistic relationship between design and construction in creating innovative, meaningful, and functional outdoor environments that will promote & protect public health, safety, and welfare.

RECOMMENDED TEXT AND SOFTWARE

- Site Engineering for Landscape Architects, 6th Edition (Strom, et al., 2013). Required readings will be available on Canvas as an eBook (through the Architecture Library).
- AutoCAD (2025 or newer). Available *free* to students at <https://www.autodesk.com/education/edu-software/overview?sorting=featured&filters=individual>, and requires the student to create an account. Verify that your computer hardware can accommodate the software. Minimum system requirements: <https://knowledge.autodesk.com/support/autocad/troubleshooting/caas/sfdcarticles/sfdcarticles/System-requirements-for-AutoCAD.html>.
- Supplemental Readings (available in the Architecture Library):
 - Designing the Sustainable Site (Venhaus, 2012).
 - Sustainable Solutions for Water Resources (Sipes, 2010).

COURSE OBJECTIVES

This course will develop the student's capacity to...

1. Investigate and apply the technical requirements and standards associated with implementation of planning and design.
2. Solve complex/advanced site-scale grading, drainage, storm water management, runoff volume estimation, roadway design and alignment, and site layout & dimensioning problems in the context of a comprehensive design project.
3. Apply technical knowledge and skills in preparation of construction documents necessary for implementation of landscape architectural planning and design.
4. Utilize the computer (i.e., AutoCAD) for solving and communicating landscape architectural systems design and design implementation problems.
5. Exercise discipline, responsibility, time management/scheduling, thoroughness, and accuracy in site systems design and documentation.
6. Engage engineering topics critical to professional practice in landscape architecture.

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LEARNING OUTCOMES

Upon successful completion of this course, the student will be able to do the following:

1. Demonstrate ecological literacy through an understanding of the complex relationships between ecological systems and engineered systems including but not limited to earthwork, stormwater and vegetation systems.
2. Solve complex/advanced site-scale grading problems.
3. Calculate pre- and post-development storm water runoff rates and volumes for a given site.
4. Design and compare traditional and green/decentralized/LID on-site systems to manage runoff.
5. Design and properly size site-scale surface (i.e., swales, ponds) and subsurface (i.e., pipes, drainage structures) drainage systems.
6. Design low-speed vehicular, bicycle, and pedestrian circulation routes and supporting facilities using industry-standard horizontal and vertical roadway alignment principles and practices according to a given project program and criteria.
7. Apply site planning and schematic design fundamentals to arrange a building, vehicular and pedestrian circulation, parking lot, service court, topography, and storm water management strategies on a given site.
8. Produce high quality construction documentation following landscape architecture professional standards and which include a grading plan, drainage plan and profiles, roadway alignment plan and profile, erosion control plan, site layout and dimensioning plan, and pertinent construction details using computer drafting software.
9. Understand the maintenance implications of site design projects.

COURSE FORMAT

The course will consist of lectures, demonstrations, multimedia presentations, studio work, and perhaps local field trips and/or guest speakers. Lectures/presentations will occur during the first hour of each class, and the remainder of class time will be devoted to studio-based exploration and knowledge & skills application related to given assignments. Refer to the attached semester schedule for the sequence of lecture topics, activities, progress expectations, deadlines, breaks, etc.

The course will begin with a review of grading & drainage fundamentals and quickly transition to new and complex engineering topics. The course emphasis will be a **comprehensive semester-long site-scale design project**, but short exercises may be assigned concurrently to help reinforce principles & practices to be applied in the project. There may be quizzes along the way that will help strengthen the student's understanding of concepts/content, and to help keep them engaged.

Canvas will be the digital course management tool (bsu.instructure.com – BSU username and password are required for access). Unless otherwise noted in class, all course materials (i.e., lectures, handouts, exercises, exams) and assignments will be available there. The student is expected to visit the course site daily for new postings, and download/save pertinent files as necessary. The student's BSU email will be the primary method of communication. The student must check email frequently and manage their account so that instructor communication is not blocked/interrupted.

ATTENDANCE & PUNCTUALITY

Active class participation is an expression of interest, commitment, and professionalism. A student's absence from class almost always adversely impacts their comprehension of course material, progress on assignments, and ultimately their performance in the course. Interaction with the instructor(s), engagement with the material, and demonstration of skill development is critical to student learning...and ultimately successful completion of the course. Therefore, attendance at lectures and participation during scheduled class/studio periods is expected.

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The student should expect attendance to be recorded regularly. **The student is allowed three (3) unexcused absences without penalty. Four (4) unexcused absences will result in a 20% reduction of the student’s final Progress & Participation score; each one (1) unexcused absence thereafter will result in an additional 20% reduction.** Eight (8) or more *unexcused* absences will result in a 5% reduction in the student’s final course grade. Once a student knows they will be absent, they should make every effort to immediately inform the instructor(s) in-person or via email. The student must provide the instructor(s) with an official note (e.g., doctor, dentist, counselor) or other proof to excuse an absence. If a student is absent or tardy for any reason, the student is responsible for making up the work or catching up on the material presented/discussed while they were absent. If a student arrives late to class, and after attendance has been taken, that student will be marked absent (unexcused).

COURSE ASSESSMENT / EVALUATION

The student’s performance in the course, including achievement of the LEARNING OUTCOMES, will be evaluated in the following manner. Refer to the accompanying schedule for due dates.

1. Comprehensive Semester Project	65%
2. Vignettes (site grading, roadway design/alignment)	22%
3. Quizzes (eight planned)	8%
4. Progress & Participation	5%
<i>(P&P is a reflection of attendance, punctuality, productivity, participation, improvement, attitude, professionalism.)</i>	
TOTAL	100%

Grading Scale

A (94-100)	Distinguished Work – work reflecting superior design, technical, and graphic execution, with great attention to detail and accuracy; may exceed project requirements; revisions minor or unnecessary.
A- (90-93)	Nearly Distinguished Work.
B+ (87-89)	Very Good Work.
B (84-86)	Good Work – work which demonstrates a solid understanding of the concepts, forms, structures, and their application in the project, but requires some changes/revisions to clearly and completely communicate or to do so with complete accuracy.
B- (80-83)	Average to Good Work.
C+ (77-79)	Above Average Work.
C (74-76)	Average Work – work which indicates a satisfactory understanding and execution of the assignment, but needs moderate revisions to fully communicate and thoroughly demonstrate implementation of concepts and/or requires moderate revisions to achieve complete accuracy.
C- (70-73)	Below Average Work.
D+ (67-69)	Poor Work.
D (64-66)	Very Poor Work – work which is partially incomplete and/or demonstrates a poor understanding of process and/or concepts; solutions are inconsistent, significantly inaccurate, and/or fail to meet minimum requirements; work requires extensive revisions.
D- (60-63)	Extremely Poor Work.
F (0-59)	Failure – work which is substantially incomplete and/or demonstrates a failure to either comprehend or implement the subject matter; most phases of work are incomplete, unacceptable, and/or work was not submitted.

RETENTION STANDARD

If a student earns below a C- in any required LA studio, engineering, or plants course, the student must retake that course. For more details, the student should visit the BLA section of the current Undergraduate Catalog:

<https://bsu.smartcatalogiq.com/2024-2025/undergraduate-catalog/estopinal-college-of-architecture-and-planning/landscape-architecture/major-in-landscape-architecture-bla/>

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INCOMPLETE (I) GRADE POLICY

No incomplete (“I”) will be given as a final course grade without sufficient and compelling cause (e.g., documented illness, personal or family crisis, etc.). In such a case, the instructor(s) must be fully informed and agree to the appropriateness and expectations of the “Incomplete.”

LATE WORK

All late work will be penalized at the discretion of your instructor(s). The student should expect a **10-point penalty for work received after the specified deadline and five (5) points per day thereafter**. If a student anticipates submitting work late, they should immediately inform their instructor in advance so the instructor can plan and grade accordingly. Computer failure or related technical problems will not constitute an acceptable excuse for late work; the student must plan responsibly and back-up their electronic work in multiple locations. Incomplete submissions will be evaluated at face value unless the student and instructor have made prior arrangements.

GENERATIVE AI STATEMENT

The use of Artificial Intelligence (AI) to complete any assignment (in part or entirely) can be beneficial (brainstorming, image editing/creation, research, writing assistance, etc.), but it can also undermine your learning/development and/or be a form of cheating. Therefore, if AI is not explicitly part of a given assignment’s workflow or deliverables, the student must consult with the instructor on the use of AI tools (e.g., ChatGPT, Claude, Midjourney, Adobe Firefly, or others) in completing assigned work. The student must cite any AI-generated material that informed/shaped their work. Using an AI tool to generate content without proper attribution constitutes a violation of Ball State University’s Student Academic Ethics Policy. If it is appropriately determined by the instructor that the work submitted by the student is not their own (by way of plagiarism, unapproved use of AI tools, or other forms of cheating), a grade of zero (0) may be assigned for that work.

ACADEMIC ETHICS

Academic dishonesty, such as plagiarism, involves violations of procedures which protect the integrity of the coursework completed by a student. Honesty, trust, and personal responsibility are fundamental attributes of the University community. Academic dishonesty by a student will not be tolerated, for it threatens the foundation of an institution dedicated to the pursuit of knowledge. To maintain its credibility and reputation, and to equitably assign evaluations of scholastic and creative performance, Ball State University is committed to maintaining a climate that upholds and values the highest standards of academic integrity.

The design studio is a place for hands-on exploration, discovery, application, and learning. The student is encouraged to observe and discuss assignments/projects with fellow students. However, all work submitted for evaluation must be the result of individual effort. No form of cheating will be tolerated in any academic assignment. If it is appropriately determined by the instructor(s) that the work submitted by a student is not their own (by way of plagiarism, fabrication, or cheating), the student should expect a grade of zero (0) to be assigned for that work. The instructors will adhere to university Academic Integrity policies and procedures.

Academic integrity violations include giving or receiving an unfair academic advantage (cheating), presenting someone else’s ideas or work as your own (plagiarism), and falsifying academic records. The student should check with instructors if they are unsure whether something constitutes academic dishonesty. Examples of academic integrity violations include but are not limited to:

- Using resources not authorized by the faculty member (including devices, AI tools, hidden notes, and open books).
- Using commercial study websites to find answers to graded assignments (Chegg, Course Hero, StudyPool, OneClass, etc.).

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- Without the instructor's written permission, giving away, buying, or selling graded assignments class notes, exams, study guides, or other course materials to other students or to third-party vendors (Course Hero, Chegg, 24HourAnswers, etc.).
- Working with another person on any assignment other than authorized group projects.
- Sharing or allowing others to access your files, whether done with permission or not.
- Reusing your own work from another semester, course, or section.
- Sharing answers with others during exams (passing notes, texting, whispering, gesturing).
- Discussing exam questions and answers with students who have not taken the exam.
- Soliciting others to complete work for you.

Two important things to remember about academic dishonesty: (1) it is self-defeating (e.g., unprofessional, embarrassing, career-impeding if hired and found unable to perform) and (2) *planning in advance* and *staying on-schedule* are arguably the best ways to avoid cheating. Students are strongly encouraged to immediately contact the instructor(s) if they are having difficulty making progress or meeting deadlines.

EMERGENCIES OR TECHNICAL ISSUES

In Case of Emergency

If, for any reason, an emergency situation occurs during class and your instructors are unable to coordinate a response, PLEASE IMMEDIATELY LOCATE AND ACTIVATE THE RED CALL BUTTON LOCATED ON THE WALL in your studio and/or the AB 210 classroom (and other classrooms in which you may meet). Students should also call 9-1-1 or University Police at 765-285-1111.

Technical Assistance

If a student needs technical assistance with Canvas or other IT/hardware/software issues, they should contact the [BSU Help Desk](#) at 765-285-1517 or toll-free at 1-866-771-3276. The student may also visit the link below and follow the *Knowledge Base* link to find useful how-to videos and answers to many frequently asked questions. They are available for walk-in support at Tech Center, Bracken Library, room 101.

UNIVERSITY POLICIES AND STATEMENTS

University/Disability Statement

We are committed to ensuring that all members of the community are welcome, through valuing the various experiences and worldviews represented at Ball State and among those we serve. We promote a culture of respect and civil discourse. If you need course adaptations or accommodations because of a disability, please contact your instructor(s) as soon as possible. Ball State's [Disability Services Office](#) coordinates services for students with disabilities; documentation of a disability needs to be on file in their office before any accommodations can be provided. You can contact Disability Services at 765-285-5293 or dsd@bsu.edu. Please note that instructors are not authorized to determine disability, provide certification of disability, or to arrange for a determination of disability.

Student Leaves

Leaves and excuses by reason of bereavement (e.g., funeral, jury duty, medical, sports, religious holidays) shall comply with university [Attendance Policies](#). Arrangement for completion of assigned work shall be made with the instructors.

Freedom of Expression

In this course, we are committed to fostering a learning environment that values intellectual diversity, encourages free expression, and promotes open inquiry. As members of the Ball State Community, we treat each person in the Ball State community with civility, courtesy, compassion, and dignity and respect and learn from differences in

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people, ideas, and opinions. Please review Ball State University's [Statement on Freedom of Expression](#), the resources on Ball State's [Freedom of Expression webpage](#), and [Ball State's Beneficence Pledge](#).

Title IX

Ball State University is committed to providing a safe and inclusive learning environment for all students. If you or someone you know has experienced sexual harassment—including sexual assault, dating violence, domestic violence, or stalking, please know that you are not alone. The University offers support services and resources. For more information or to report an incident, please visit BSU's [Title IX web page](#) or contact the Title IX Coordinator at 765-285-1545 or at titleix@bsu.edu.

As your instructors, we are mandatory reporters under the Title IX policy and required to report any information we receive about possible sexual harassment. This includes information shared in class discussions, assignments, or private conversations.

What happens after we report? The Title IX Coordinator will email the person who experienced sexual harassment (complainant) and invite them to schedule a meeting. If the complainant chooses to meet with the Title IX Coordinator,

- Title IX Coordinator will offer supportive measures (e.g., counseling, extensions on deadlines, course-related adjustments, changes to work or class schedules, and/or referrals to campus offices), review the policy, and discuss options to move forward.
- If a complaint is filed by the complainant or the University, an investigation will begin following University policy.

Anti-Bias, Anti-Harassment, Sexual Harassment

To report a bias, harassment, or sexual harassment incident, use the reporting process found at the Say Something link.

- Ball State University's [Say Something](#)
- Ball State University's [Anti-Harassment Policy](#)
- Ball State University's [Statement on Sexual Harassment](#)

University Grade Appeal Policy

If you believe you received a final course grade that does not reflect your performance due to fairness or a procedural issue, you have the right to file an appeal within five (5) school days after final grades are posted by the Office of the Registrar. Review the [University Grade Appeal Policy and Process](#).

STUDENT SUPPORT SERVICES

The Learning Center

The Learning Center offers free Tutoring and Academic Coaching for many courses at Ball State. Students can make appointments for online (Zoom) or in-person (NQ 350) appointments. To make an appointment, visit myballstate.bsu.edu and click on "Navigate" in the Academic Tools section, or just go directly to bsu.navigate.eab.com.

Testing accommodations for students with disabilities are available for students who have received the appropriate documentation from Disability Services. Tests may be administered in the Learning Center.

Supplemental Instruction is available in select courses. If a student has an SI leader for their course, that person will provide students with information the first week of school regarding weekly study sessions. For more information about Learning Center programming, visit bsu.edu/learningcenter or call 765-285-1006. Follow us on Instagram: [BallStateLC](#).

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The Writing Center

All writers improve with practice and feedback, so students in this course are encouraged to use the Writing Center (in Robert Bell 295 during weekdays, Bracken Library First Floor West in the evenings, or online during any of our regularly scheduled hours) to get additional feedback on their writing.

The Writing Center offers free planning, feedback, and accountability sessions (in person and online) to all students composing essays, reports, reflections, research projects, web content, lesson plans, slideshows, poster presentations, resumes, and other digital or print texts. To schedule a free appointment to discuss writing, go to bsu.edu/writingcenter. Online and in-person appointments are available; however, students should plan ahead because appointments book quickly!

The Basic Needs Hub

If a student is having difficulty affording enough food, does not have a safe and reliable place to sleep, and/or is experiencing an emergency or crisis, help is available through the [Basic Needs Hub](#). The Basic Needs Hub has information, resources, and provides individualized support to students. To talk with a supportive staff member about an experience, receive one on one assistance, or learn more about resources, students can submit a [Basic Needs Assistance Form](#).

The Counseling Center

The Ball State University Counseling Center offers free and confidential services to all students. The Counseling Center is located in Lucina Hall, Room 320. To schedule an appointment, students can contact them at 765-285-1736. Ball State also offers a 24/7 Crisis Line, which can be reached at 765-285-HOPE (4673). The Crisis Line is a mental health resource for those who are struggling with any mental health concerns, including thoughts of self-harm and/or suicide.

At the Ball State Counseling Center, we see students for a variety of reasons, some of which include homesickness, relationship concerns, anxiety, and depression. At your first appointment, you will work with a therapist to create a plan that will connect you with resources that best fit your needs. We assist students with getting connected to therapy at our Center as well as connecting students to self-help resources, other on-campus resources, and community-based resources. All Ball State students also have access to several on-demand, self-help resources through a variety of different platforms. All of these resources, including a direct link to our website, can be found [here](#).

The Speaking Center

The [Speaking Center](#) is a free resource available to all members of the BSU community wanting to improve their public speaking abilities. We offer personalized coaching designed to help you become a more confident and effective speaker. Our trained coaches provide constructive feedback and support throughout the entire speech preparation process, whether you are in the early stages of brainstorming ideas and organizing your thoughts, or you need to practice your delivery and refine your message.

The Center is in the David Letterman Communication and Media Building, room 302. To schedule an appointment, please access us through your Navigate app or use this [direct link](#) to sign up for a time. Appointments are available both in person and on Zoom. Appointments are available in person, on Zoom, and in virtual reality (VR) for those interested in practicing in an immersive speaking environment.

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STUDENT PRIVACY

FERPA and Privacy

As a student, your educational records are considered confidential. Under FERPA (Family Educational Rights and Privacy Act), your records are confidential and protected. Under most circumstances, your records will not be released without your written and signed consent. However, some directory information may be released to third parties without your prior consent unless a written request to restrict this is on file. You can learn more about student rights to privacy by reading [Ball State's FERPA and Privacy and Protection](#).

To support a learning experience that is responsive to the needs, interests, and pace of our class community, the course schedule may shift over the semester. Likewise, this syllabus is subject to change in the event of extenuating circumstances. The most current version of the schedule and syllabus will always be available on Canvas. Please check there regularly for updates and contact your instructors if you have any questions.

SYLLABUS DISCLAIMER

This syllabus is intended to serve as a guide for the course and is subject to change at the instructor's discretion. While the core learning objectives and assessment methods will likely remain consistent, adjustments may be necessary due to unforeseen circumstances, pedagogical considerations, or to best meet the needs of the class. Students will be notified of any significant changes in advance.