

INSTITUTE FOR LATINO PROGRESS

GREEN BUILDING TECHNOLOGIES BRIDGE PROGRAM SYLLABUS

COURSE SUMMARY

Over the next sixteen weeks, participants will work to strengthen their core basic skills in order to prepare them for entry into the Building Energy Technologies (BET) program offered at Wilbur-Wright College. Participants will focus on strengthening their reading, writing, math and other basic skills in the context of green building and the emerging green economy. The primary objective is to prepare students to take the COMPASS Test, a college entrance exam that will determine their readiness for entry into the Wright college BET program. This will be achieved through practice test taking and active learning and discussion around market and societal forces currently shaping the green building industry, including strategies in sustainable design, green products and materials, onsite energy production, among others.

Another contextual theme throughout the course will be what the US Green Building Council has coined as the “triple bottom-line” – i.e. discussion and readings about the environment, society and the economy and how these three forces shape our decisions as environmentally conscientious participants in a global community. Different relationships between people, the built environment and nature will be examined in readings from various mainstream and academic sources. Furthermore, a portion of the course content is taken directly from US Green Building Council materials dedicated to LEED credentialing and certification.

The objective here is to prepare participants for the eventual goal of obtaining their LEED Green Associate credential, as a way to improve their marketability in today’s competitive job market. In addition to reading comprehension practice, the context of credentialing both for the LEED Green Associate credential and other skill-specific credentials will provide the context around which participants will begin to formulate a longer-term career plan in green building. As they move through this career pathway, including this Bridge course and the Wright College BET program, participants must take the initiative to evaluate the current job market and formulate a viable career strategy.

Overall, this course will challenge and inspire students to continue their professional development, to retool for a new and more competitive job market, and to become active participants in shaping an emerging market for a high-performance built environment.

PARTICIPANT DYNAMICS

Bridge program participants will come from a wide range of personal and professional backgrounds from which they can pull unique insights for consideration during class discussion. Some of them will be English as a second-language learners, given the geographic focus of the program. Consequently, reading comprehension, writing and math skills proficiency levels will vary from student to student. This is common across most, if not all, adult training programs.

Core basic skills like math and language were not the only considerations taken in developing this program. Instructors from Wilbur Wright College were surveyed to understand and prioritize the most important core competencies that will work towards the successful completion of the BET Program. The following is a list of those

skills BET instructors identified as most important. Consequently this curriculum incorporates exercises across a broad range of skills training including:

Basic Math Memorization General Problem Solving Quantitative Reasoning Reading Comprehension	Writing Computer Skills Interpersonal Communication Critical Thinking Project Management Skills
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LEARNING OBJECTIVES

By the end of the course, participants will have a stronger command of the English language, mathematics, and understanding of the core concepts in the green building profession. The goal is to have them ready to “hit the ground running” upon entry into the BET program at Wilbur Wright College. Once there, they will be expected to navigate a broader and more challenging set of materials. The objective here will be to tool students with the foundations of language and math.

METHODS

The overall approach of the course will be to alternate in the level of content difficulty. One day students will be refining their spelling and basic grammar skills, while other days they will be analyzing detailed credit requirement descriptions directly from the LEED Accredited Professional Reference Guide. Participants will participate in passive and active learning. While some of the materials will require them to absorb and process information quickly, other materials will focus on improving students ability to analyze complex concepts. Likewise, a Socratic approach will be taken to constantly engage students.

COURSE MATERIALS

The material for this course is a unique combination of learning basics and subject-specific material around green building and the green economy. Below are some of the main sources of materials used for this course:

Sustainable Construction: Green Building Design & Delivery – Charles J. Kibert

This will be the guiding text for the Bridge course. It is the same book used for BET 104 – Building Energy Systems Fundamentals. Kibert reads like a college level textbook and is a concept-based resource covering a broad range of topics from construction management to economic analysis of green buildings. Students will find the language challenging but will be assigned weekly reading comprehension questions as a guide covering the main ideas in each chapter.

Timed Reading Series Jamestown Publications – This book series is a compilation of timed readings that take context from science, math and literature. Exposing students to these different writing styles will prepare them for the COMPASS exam while strengthening their overall language skills. Likewise, the Timed Reading Series offers a spectrum of difficulty levels moving from the 4th to the 10th grade levels. The difficulty level can be decreased or increased depending on the proficiency level of the students.

LEED Materials - Much of the discussion around “green” building will focus on LEED certification and credentialing. Leadership in Energy and Environmental Design or LEED, is a system developed by the US Green Building Council to certify building systems on their overall energy efficiency and environmental friendliness. The

USGBC also issues LEED credentialing for working professionals as a way to distinguish themselves as forward-thinking environmentally conscientious building professionals.

This course will work with materials intended to prepare people for the LEED Green Associate credential – the first tier in the LEED credentialing process. Students are not expected to take the LEED Green Associate exam during this course. Instead, the LEED GA material is used to improve participants' familiarity with terminology of the sustainability profession. Likewise, the LEED Green Associate credential is set as a longer-term professional development goal for participants.

COMPASS Practice Exams – The main objective of this course is to ensure that participants pass the COMPASS college entrance exam. A good score on the COMPASS will determine their eligibility to participate in the Wilbur Write BET Program. Throughout the course students will take COMPASS practice exams to improve their test taking skills and familiarity with the exam format.

Online Resources - Much of the content for this course has been pulled from various online media and other resources. Students will learn about the green building movement while improving their reading comprehension skills and green building vocabulary.

Computer Lab – Strong computer skills will be crucial to participants' success with the BET program and beyond. During the course, students will learn how to navigate the internet, improve their typing speed, and write resumes and cover letters. They will also learn MS Excel basics as a way to strengthen their quantitative and analytical skills.

Institute for Latino Progress

Green Building Technologies Bridge Curriculum

Table of Course Contents

Week One: Introduction & Basic Skills Assessment

Day One

Activity A - Course Introduction

Activity B - Green Jobs Overview – “segments of the green economy”

Activity C - Course Textbook Review – Kibert Text

Day Two

Activity A - Networking Session – Getting to know the group

Activity B - Balancing Work with Continuing Education – Managing time effectively

Day Three

Activity A - Reading Comprehension Assessment in Literature – Prose text type

Activity B - Reading Comprehension Assessment in Math – Analytical text type

Activity C - Reading Comprehension Assessment in Science - Informative text type

Day Four

Activity A - Basic Skills Assessment – Arithmetic

Activity B - Basic Skills Assessment – Writing

Activity C – Spelling Overview

Week Two: Introduction to Green Building Foundations

Day One

Language of Green Construction

Activity A –Kibert Text Review Questions: Chapter One – Introduction & Overview

Activity B - Case Studies: High-Performance Building Descriptions

Activity C - Timed Reading Series

Day Two

Language of Green Construction

Activity A – Who does what? – Brainstorming session on sustainable construction

Activity B – COMPASS Prep – READING COMPREHENSION ESSAYS 1, 2, and 3

Activity C – Spelling quiz and new words



Day Three

LEED Green Associate Prep

Activity A – Introduction to LEED and the LEED Green Associate Exam

Activity B - LEED Case Study: Schools

Day Four

Math & Technology in the Workplace

Activity A - Introduction to Computer Basics

Activity B - Introduction to the Internet – Finding Information

Activity C - Introduction to the Internet – Setting up an email account

Week Three: Green Building Foundations

Day One

Language of Green Construction

Activity A – Kibert Text Review Questions: Chapter Two – Background Green Building Foundations

Activity B – Green Reading - NPR on the Green Building Revolution

Activity D - Timed Reading Series

Day Two

Language of Green Construction

Activity A – Green in the Media: Hot Rocks and High Hopes – Geothermal Power

Activity B – COMPASS Prep – Writing Workshop: Geothermal Power a good idea?

Activity C – Spelling Quiz Two and New Words

Day Three

LEED Green Associate Prep

Activity A - LEED Green Associate Core Concepts – Introduction pgs. 3-13

Activity B – LEED Overview – pgs. 18-25 of GA Walkthrough

Activity C – LEED GA Study Guide – Green building overview pgs. 9-19 + review questions

Day Four

Math & Technology in the Workplace

Activity A - Introduction to Microsoft Word

Activity B – Saving Files

Activity C – Emailing Files

Week Four:

Day One

Language of Green Building

Activity A – Kibert Text Review Questions: Chapter Three – Green Building Assessment

Activity B – Green Reading – The Green Globes Assessment System

Activity C - Timed Reading Series

Day Two

Language of Green Building

Activity A – Green in the Media: Manufactured Homes Company Goes Green

Activity B – COMPASS Prep – GRAMMAR TRAINING Writing Tests 1 and 2

Activity C – Spelling quiz and new words

Day Three

LEED Green Associate Prep

Activity A - LEED Green Associate Core Concepts – USGBC Programs pgs. 15-24

Activity B – How to become a LEED GA? – pgs. 18-24 of GA Walkthrough

Activity C – LEED GA Study Guide – What about USGBC and Programs? pgs. 21-45 + review questions

Day Four

Math & Technology in the Workplace

Activity A - Copy & Paste Internet Scavenger Hunt

Activity B - Emailing Links and Using the Internet to Find a Job

Activity C - Microsoft Word – Using bullets and numbering; the beginnings of a resume

Week Five:

Day One

Language of Green Building

Activity A - Kibert Text Review Questions: Chapter Four: Green Building Process

Activity B – Green Reading – Background on Natural Gas

Activity D - Timed Reading Series

Day Two

Language of Green Building

Activity A – Green in the Media: Natural Gas Growing in Power

Activity B – COMPASS Prep – READING COMPREHENSION 4, 5, and 6

Activity C – Spelling quiz and new words

Day Three

LEED Green Associate Prep

Activity A - LEED Green Associate Core Concepts –Sustainable Sites pgs. 25-35

Activity B - LEED AP Reference Guide – Sustainable Sites Overview + Prerequisite 1 pgs. 47-54

Activity C - LEED Case Study: Hospitals

Day Four

Math & Technology in the Workplace

Activity A - MS Excel Basics - Meet the Workbook

Activity B - Microsoft Excel Basics – Enter Data

Activity C - Microsoft Excel Basics – Edit Data and Revise Worksheets

Activity D – Typing Practice

Week Six:

Day One

Language of Green Building

Activity A – Kibert Text Review Questions: Chapter Five – Ecological Design

Activity B – Green Reading – Know your City Chicago Facts & Statistics

Activity C - Timed Reading Series

Day Two

Language of Green Building

Activity A – Green in the Media: Greener Bacon – A bioengineered pig that excretes fewer pollutants

Activity B – COMPASS Prep – WRITING WORKSHOP

Activity C – Spelling quiz and new words

Day Three

LEED Green Associate Prep

Activity A – LEED GA Study Guide – Sustainable Sites pgs. 49-61 + review questions

Activity B - LEED AP Reference Guide – Credit 2 – Development Density & Community Connectivity

Activity C - LEED Practice Exam Questions Series One

Day Four

Math & Technology in the Workplace

Activity A - COMPASS Math Questions 1 and 2 – Order of Operations

Activity B - COMPASS Math Questions 3, 4, 5 – Fractions

Activity C - COMPASS Math Question 6 – Percentages

Week Seven:

Day One

Language of Green Building

Activity A – Kibert Text Review Questions: Chapter Six – Sustainable Sites and Landscaping

Activity B - Group Assignment – Passive Design Strategies

Activity C - Timed Reading Series

Day Two

Language of Green Building

Activity A – Green in the Media: Chicago Plans Most Electrified City in the US

Activity B – COMPASS Prep – GRAMMAR TRAINING Writing Tests 3 and 4

Activity C – Spelling quiz and new words

Day Three

LEED Green Associate Prep

Activity A – LEED Green Associate Core Concepts –Water Efficiency pgs. 37-42

Activity B – Water Efficiency – pgs. 56-58 of GA Walkthrough

Activity C - LEED Case Study: Hospitality

Day Four

Math & Technology in the Workplace

Activity A - Email Around the Contact List

Activity B - The 100 Employers List and Saving Documents Through Your Email Account

Activity C – Typing Practice

Week Eight:

Day One

Language of Green Building

Activity A - Kibert Text Review Questions: Chapter Seven – Energy & Atmosphere

Activity B- Green Reading – Expanding Options – Spray Foam Insulation

Activity C - Timed Reading Series

Day Two

Language of Green Building

Activity A – Green in the Media: Geothermal Heat Growing in Popularity

Activity B – COMPASS Prep – READING COMPREHENSION ESSAYS 7, 8, and 9

Activity C – Spelling quiz and new words

Day Three

LEED Green Associate Prep

Activity A - LEED GA Study Guide – Water Efficiency pgs. 6 + review questions

Activity B- LEED AP Reference Guide – WE Credit 1.1 & 1.2 – Water efficient landscaping

Activity C - LEED Practice Exam Questions Series Two

Day Four

Math & Technology in the Workplace

Activity A - COMPASS Math Questions 7-19 – Percentages and Fractions Review

Activity B - COMPASS Math Questions 18 – 27 – Advanced Percentage Word Problems

Activity C – Typing Practice

Week Nine:

Day One

Language of Green Building

Activity A - Kibert Text Review Questions: Chapter Eight – The Building Hydrologic System

Activity B – Green Reading – Frequently Asked Questions About Electricity

Activity C - Timed Reading Series

Day Two

Language of Green Building

Activity A – Green in the Media: New Wrinkle in Hybrid Cars

Activity B – COMPASS Prep – WRITING WORKSHOP

Activity C – Spelling quiz and new words

Day Three

LEED Green Associate Prep

Activity A - LEED Green Associate Core Concepts –Energy & Atmosphere pgs. 43-51

Activity B – Energy & Atmosphere – pgs. 60-65 of GA Walkthrough

Activity C – LEED Case Study – K-12 Hanover Pennsylvania

Day Four

Math & Technology in the Workplace

Activity A - Getting to Know Excel 2007: Enter Formulas – Get Started

Activity B - Getting to Know Excel 2007: Enter Formulas – Use Cell References

Activity C - Getting to Know Excel 2007: Enter Formulas – Simplify formulas by using functions

Week Ten:

Day One

Language of Green Building

Activity A - Kibert Text Review Questions: Chapter Nine – Closing Materials Loops

Activity B – Green Reading: Two Thirds of China’s Cities Awash With Garbage

Activity C - Timed Reading Series

Day Two

Language of Green Building

Activity A – Green in the Media: Bullish on Commercial Properties – Outlook for retrofit market

Activity B – COMPASS Prep – GRAMMAR TRAINING Writing Tests 5 and 6

Activity C – Spelling quiz and new words

Day Three

LEED Green Associate Prep

Activity A - LEED GA Study Guide – Energy & Atmosphere pgs. 79 - 92 + review questions

Activity C- LEED AP Reference Guide – EA Credit 2 – Onsite Renewable Energy

Activity B - LEED Practice Exam Questions Series Three

Day Four

Math & Technology in the Workplace

Activity A - Facebook - Introduction to Social Networking

Activity B - LinkedIn – The Professional’s Social Network

Activity C - Typing Practice

Week Eleven:

Day One

Language of Green Building

Activity A - Kibert Text Review Questions: Chapter Ten – Indoor Environmental Quality

Activity B – Green Reading – Smuggling Europe’s Waste to Poorer Countries

Activity C - Timed Reading Series

Day Two

Language of Green Building

Activity A – Green in the Media: Green City Codes in San Francisco

Activity B – COMPASS Prep – READING COMPREHENSION ESSAYS 10, 11, and 12

Activity C – Spelling quiz and new words

Day Three

LEED Green Associate Prep

Activity A - LEED Green Associate Core Concepts – Materials & Resources pgs. 53-57

Activity B – Materials & Resources – pgs. 66-69 of GA Walkthrough

Activity C – LEED Case Study – Chicago: Center for Neighborhood Technology

Day Four

Math & Technology in the Workplace

Activity A - COMPASS Math Questions 27-33 – Polynomials

Activity B - COMPASS Math Questions 34 - 37 – Negative Numbers, Exponents, and Scientific Notation

Activity C - COMPASS Math Questions 100-103 – Using algebra to solve word problems

Week Twelve:

Day One

Language of Green Building

Activity A - Kibert Text Review Questions: Chapter Eleven – Construction Operations

Activity B – Green Reading – What is a Sustainable Roof?

Activity C - Timed Reading Series

Day Two

Language of Green Building

Activity A – Green in the Media – Green Roof Collapses in Illinois

Activity B – COMPASS Prep – WRITING WORKSHOP

Activity C – Spelling quiz and new words

Day Three

LEED Green Associate Prep

Activity A - LEED GA Study Guide – Materials & Resources pgs. 97-106 + review questions

Activity B- LEED AP Reference Guide – MR Credits 6&7 – Rapidly Renewable Materials & Certified Wood

Activity C - LEED Practice Exam Questions Series Four

Day Four

Math & Technology in the Workplace

Activity A - Researching Company Websites & working on the 100 Employers Contact List

Activity B – Writing a Cover Letter

Activity C - Working on Resumes

Week Thirteen:

Day One

Language of Green Building

Activity A - Kibert Text Review Questions: Chapter Twelve – Building Commissioning

Activity B – Green Reading – Does my house pass the passive standard?

Activity C - Timed Reading Series

Day Two

Language of Green Building

Activity A – Green in the Media: New Online Tool for LEED Professional Credit Holders

Activity B – COMPASS Prep – GRAMMAR TRAINING Writing Tests 5 and 6

Activity C – Spelling quiz and new words

Day Three

LEED Green Associate Prep

Activity A - LEED Green Associate Core Concepts – Indoor Environmental Quality pgs. 59-63

Activity B - Indoor Environmental Quality – pgs. 71-72 of GA Walkthrough

Activity C - LEED Case Study – REI Portland

Day Four

Math & Technology in the Workplace

Activity A - Google Documents: Backing Up Files in the Cloud

Activity B - Using YouTube to find How-To videos

Activity C - Google Chat and Instant Messaging

Week Fourteen:

Day One

Language of Green Building

Activity A - Kibert Text Review Questions: Chapter Thirteen – Economic Analysis of Green Buildings

Activity B – Green Reading – Green Premium Continues to Justify Implementation Costs

Activity C - Timed Reading Series

Day Two

Language of Green Building

Activity A – Green in the Media – LEED Lawsuit Claims Deceptive Marketing

Activity B – COMPASS Prep – READING COMPREHENSION ESSAYS 13, 14, and 15

Activity C – Spelling quiz and new words

Day Three

LEED Green Associate Prep

Activity A - LEED GA Study Guide – Indoor Environmental Quality pgs. 111-122 + review questions

Activity B- LEED AP Reference Guide – IEQ Credits 6.1 – Controllability of Lighting Systems

Activity C - LEED Practice Exam Questions Series Five

Day Four

Math & Technology in the Workplace

Activity A - COMPASS Math Questions 126-136 – Geometry Basics

Activity B - COMPASS Math Questions 137 - 143 – Geometry Word Problems and Diagrams

Week Fifteen:

Day One

Language of Green Building

Activity A - Kibert Text Review Questions: Chapter Fourteen – The Cutting Edge & Beyond

Activity B – Green Reading – Architect Frank Gehry talks LEED and the Future of Green Building

Activity C - Timed Reading Series

Day Two

Language of Green Building

Activity A – Green in the Media: Mandatory Energy Benchmarking?

Activity B – COMPASS Prep – WRITING WORKSHOP

Activity C – Spelling quiz and new words

Day Three

LEED Green Associate Prep

Activity A - LEED Green Associate Core Concepts – Innovation in Design pgs. 65-67

Activity B - LEED GA Study Guide – Innovation & Design pgs. 127-132 + review questions

Day Four

Math & Technology in the Workplace

Activity A - Getting to Know Excel 2007: How to Create a Chart in Excel 2007 – Create a Basic Chart

Activity B - Getting to Know Excel 2007: How to Create a Chart in Excel 2007 – Customize your Chart

Activity C – Typing Practice

Week Sixteen:

Day One

Final Course Review

Activity A – Final Kibert Book Review

Activity B – Reading Comprehension and Spelling Quiz results

Day Two

Final Course Review

Activity A – Pre - COMPASS CUMULATIVE EXAM (READING) – ESSAYS 16, 17, and 18

Activity B – Pre - COMPASS Prep CUMULATIVE EXAM (WRITING) – Alternative energy best in show

Activity C – Pre - COMPASS Prep CUMULATIVE EXAM (GRAMMAR) – Writing Tests 7 and 8

Activity D – Pre - COMPASS Prep CUMULATIVE EXAM (MATH)

Day Three

Final Course Review

Activity A – LEED Green Associate FINAL EXAM

Activity B - Review results of the Pre-COMPASS CUMULATIVE EXAM

Day Four

Final Course Review

Activity A – Celebrate a job well done