

МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
Київський національний університет будівництва і архітектури

ІНОЗЕМНА МОВА (АНГЛІЙСЬКА)

Методичні рекомендації
до практичних занять з англійської мови
для студентів спеціальності 192
«Будівництво та цивільна інженерія»

Київ 2023

УДК 811.111

I-67

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*Затверджено на засіданні кафедри мовної підготовки і
комунікації, протокол № 3 від 13 березня 2023 року.*

В авторській редакції.

Іноземна мова (англійська): методичні рекомендації до
I-67 практичних занять з англійської мови / уклад.: Т. О. Лук'яненко. –
Київ : КНУБА, 2023 – 24 с.

Містять зміст, порядок оформлення і вказівки до виконання практичних завдань студентами освітнього рівня «бакалавр». Викладено тексти з вправами для поглибленого вивчення та розширення словникового запасу студентів.

Призначені для студентів, які навчаються за спеціальністю 192 «Будівництво та цивільна інженерія».

Загальні положення

Методичні рекомендації передбачають здатність студентів застосовувати нижчевказаний матеріал відповідно до потреб і вибраних засобів навчання, що використовують методи, форми та засоби для кращого засвоєння відповідних тем. Вони мають за мету:

- набуття навичок роботи з фаховим текстовим матеріалом і засвоєння термінологічної лексики,
- розвиток навичок і вмінь фахового спілкування англійською мовою.

Робота складається із 3 розділів, кожен з яких містить текст фахової тематики, до кожного тексту додаються завдання для формування навичок фахового спілкування.

Мета курсу: сформувати у студентів комунікативну, лінгвістичну соціокультурну компетенції, позитивне ставлення до оволодіння культурною англійською мовою, розвивати у студентів здатність до самооцінки та фахового спілкування; виховувати й розвивати у студентів почуття самосвідомості.

Основним завданням студентів є оволодіння знаннями, засвоєння термінів і набуття вмінь використовувати спеціалізовану лексику.

Text 1: History of creation of BIM technologies

Building Information Modeling (BIM) technologies have a relatively recent history, spanning a few decades. The evolution of BIM can be traced back to the 1970s, although the term itself was not coined until the early 2000s. Here's a brief overview of the history of BIM technologies:

Early Development (1970s-1990s):

The early roots of BIM can be found in the development of Computer-Aided Design (CAD) systems. These systems allowed architects and engineers to create 2D digital representations of buildings and structures.

In the 1980s, advancements in CAD technology led to the introduction of 3D modeling capabilities. Architects and engineers began to create digital 3D models of buildings, which provided more comprehensive visualizations and improved design accuracy.

Concurrently, various software applications emerged that focused on specific aspects of the building process, such as structural analysis and estimating. These applications laid the foundation for the integration of different disciplines and data within a digital environment.

Conceptualization of BIM (1990s-2000s):

The term "Building Information Modeling" (BIM) was first used in a paper published by Robert Aish in 1992. Aish, a British architect, described a vision of an integrated digital model that could contain comprehensive information about a building's design, construction, and operation.

In the late 1990s and early 2000s, several organizations, including Autodesk and Bentley Systems, began developing software platforms that integrated various aspects of the building process into a single model. These platforms allowed for the coordination of different disciplines, such as architecture, structural engineering, and MEP (mechanical, electrical, and plumbing) systems.

BIM software started to gain traction as a more efficient and collaborative approach to building design and construction, offering benefits such as clash detection, improved visualization, and data sharing.

Standardization and Adoption (2000s-Present):

Various organizations and government bodies recognized the potential of BIM and started developing standards to facilitate its implementation. Notable

examples include the National BIM Standard-United States (NBIMS-US) and the BIM Forum's Level of Development (LOD) specification.

As BIM adoption increased, governments around the world began mandating its use in public projects. Countries such as the United Kingdom, Singapore, and Finland were early adopters of BIM mandates.

BIM technology continued to evolve, incorporating advancements such as cloud-based collaboration, mobile applications, and virtual reality (VR) and augmented reality (AR) integration. These developments further enhanced the capabilities and accessibility of BIM tools.

Today, BIM has become an integral part of the architecture, engineering, and construction (AEC) industry. It enables improved collaboration, cost and schedule optimization, clash detection, facility management, and lifecycle analysis. The technology continues to evolve, with ongoing research and development aimed at further enhancing its capabilities and expanding its applications.

Task 1. Word list

- Building Information Modeling – інформаційне моделювання будівель
- a relatively – порівняно
- software platforms – програмні платформи
- capabilities – можливості
- lifecycle analysis – аналіз життєвого циклу
- governments – уряди
- structural engineering – будівельна інженерія
- technologies – технологія
- evolution – еволюція
- traced – простежується

Task 2. Find in the text the English equivalents to the following

- Building Information Modeling (BIM) technologies
- building design
- structures
- Computer-Aided Design (CAD)
- digital models of buildings
- 3D modeling

- architecture
- structural engineering
- MEP systems (mechanical, electrical, and plumbing systems)
- clash detection
- improved visualization
- facility management
- lifecycle analysis

Task 3. Mark these sentences True/False

BIM technologies originated in the 1950s. [True/False]

BIM stands for Building Information Modeling. [True/False]

The term "BIM" was first used in the 1990s. [True/False]

BIM software integration allows coordination of different disciplines in the construction process. [True/False]

BIM mandates have been implemented by governments worldwide. [True/False]

BIM technology has remained static and has not evolved over time. [True/False]

Cloud-based collaboration is not a feature of BIM technology. [True/False]

BIM is primarily used for 2D modeling of buildings. [True/False]

BIM enables clash detection and improved visualization. [True/False]

BIM is not applicable to facility management or lifecycle analysis. [True/False]

Task 4. Read the text below. For questions (1-5) choose the correct answer (A, B, or C)

1) When did the term "Building Information Modeling" (BIM) come into use?

A) 1970s

B) 1990s

C) early 2000s

2) What does BIM stand for?

A) Building Information Management

B) Building Information Modeling

C) Building Integration Model

3) What technological advancement allowed for the creation of 3D digital models?

- A) Cloud-based collaboration
- B) Virtual reality integration
- C) Advancements in CAD technology

4) What are some benefits of BIM technology?

- A) Clash detection, improved visualization, and data sharing
- B) Energy efficiency, cost reduction, and marketing analysis
- C) Historical preservation, urban planning, and landscape design

5) Has BIM technology remained static or evolved over time?

- A) Static
- B) Evolved
- C) Combination of static and evolved

Text 2: Innovations in Construction

Introduction:

In the modern world, where technological progress plays an increasingly significant role, innovations are an integral part of every industry, including construction. Innovative developments in this field not only improve the efficiency of construction processes but also contribute to the creation of more resilient, energy-efficient, and environmentally friendly buildings. In this report, we will discuss several key innovative technologies that are transforming the face of modern construction.

1. 3D Printing of Building Structures

One of the most remarkable achievements in recent years is the use of 3D printing in construction. This technology enables the rapid and efficient creation of complex building structures. It reduces reliance on manual labor, shortens construction timelines, and helps lower costs. 3D printing can be utilized for creating building components, foundations, walls, and even entire buildings.

2. Smart Building Systems

Smart buildings represent another innovative technology that can make buildings more functional and efficient. They utilize smart automation systems that control lighting, heating, ventilation, and other building systems. This allows for

reduced energy consumption, improved comfort conditions for occupants, and increased overall building productivity.

3. Use of Environmentally Friendly Materials

Modern innovations in construction also include the development and utilization of environmentally friendly materials. Materials such as aerogel, recycled materials, biocomposites, and others enable the construction of energy-efficient and sustainable buildings that have a reduced negative impact on the environment. The use of these materials contributes to carbon emissions reduction and the conservation of natural resources.

Conclusion:

Innovations in construction offer numerous possibilities for creating future buildings that are resilient, efficient, and environmentally friendly. 3D printing, smart systems, and environmentally friendly materials are just a few of the many innovations transforming the construction industry. Thanks to these technologies, we can expect future construction to be efficient, resilient, and environmentally conscious.

Task 1. Лексика

1. Innovative developments – інноваційні розробки
2. Construction processes – будівельні процеси
3. Building structures – будівельні конструкції
4. 3D printing – 3D-друк
5. Manual labor – ручна праця
6. Construction timelines – терміни будівництва
7. Smart automation systems – системи «розумної» автоматизації
8. Lighting, heating, ventilation – освітлення, опалення, вентиляція
9. Energy consumption – споживання енергії
10. Environmentally friendly materials – екологічно чисті матеріали
11. Aerogel – аерогель
12. Recycled materials – вторинні матеріали
13. Biocomposites – біокомпозити
14. Carbon emissions reduction – зменшення викидів вуглецю
15. Natural resources conservation – збереження природних ресурсів
16. Resilient buildings – стійкі будівлі

17. Energy-efficient – енергоефективні
18. Sustainable – сталі
19. Eco-friendly – екологічно безпечні
20. Construction industry – будівельна галузь

Творче завдання

Запитання до тексту:

- a) What specific advantages of 3D printing in construction are mentioned in the text?
- b) How do smart building systems in construction lower energy consumption?
- c) What types of building structures can be created using 3D printing?
- d) Which environmentally friendly materials are mentioned in the text?
- e) What are the advantages of environmentally friendly materials for construction mentioned in the text?
- f) How does the use of innovations in construction contribute to the reduction of carbon emissions?
- g) What are the main characteristics of smart systems in construction that enhance building productivity?
- h) What challenges can arise in the implementation of innovations in construction?
- i) What other innovative technologies in addition to 3D printing and smart systems are mentioned as transforming the construction industry?
- j) What potential consequences for the environment are mentioned in the text regarding the use of construction technologies? Some specific advantages of 3D printing in construction mentioned in the text include rapid and efficient creation of complex building structures, reduced reliance on manual labor, shortened construction timelines, and cost savings.

Task 3. Grammar

Вправа з граматики: Правильне вживання артиклів

Інструкція: Виберіть правильний варіант (a, an, the або жоден артикль) для заповнення пропусків у наступних реченнях, що відповідають тексту про іновації в будівництві.

1. 3D printing is ____ innovative technology that has revolutionized ____ construction industry.

- a) an, the
- b) the, the
- c) an, -
- d) -, the

2. Smart building systems utilize ____ automation systems to control ____ lighting, heating, and ventilation.

- a) an, the
- b) -, the
- c) the, -
- d) an, -

3. ____ use of environmentally friendly materials is crucial for constructing ____ sustainable buildings.

- a) The, -
- b) An, the
- c) -, the
- d) An, -

4. ____ aerogel is ____ material that offers excellent insulation properties. a) An, the

- b) -, the
- c) The, an
- d) An, -

5. Innovations in construction industry are transforming ____ way buildings are designed and built.

- a) the
- b) an
- c) a
- d) –

6. Smart systems can optimize ____ energy consumption and improve ____ overall efficiency of ____ buildings.

- a) an, -, the
- b) -, the, the
- c) the, the, -
- d) -, an, the

7. ____ use of 3D printing in construction has led to significant advancements in ____ speed and quality of ____ building processes.

- a) The, the, the
- b) An, a, the
- c) -, -, -
- d) An, the, the

8. ____ environmentally friendly materials contribute to ____ sustainability of ____ construction projects.

- a) The, -, -
- b) -, the, the
- c) An, the, -
- d) -, -, -

9. Construction industry is constantly evolving with ____ introduction of innovative technologies such as robotics and virtual reality. a) the

- b) an
- c) a
- d) –

10. ____ implementation of these technologies requires ____ collaboration between various stakeholders in ____ industry.

- a) The, a, the
- b) -, -, the
- c) An, the, an
- d) -, a, the

Text 3: Monolithic Construction Advantages

Monolithic construction is a method of building structures using a single continuous pour of concrete, creating a solid and seamless structure.

This technique offers several advantages in terms of strength, durability, and construction speed.

One key benefit of monolithic construction is its structural integrity. By pouring concrete in a continuous form, there are no joints or seams that could weaken the overall structure. This makes monolithic buildings resistant to earthquakes and other natural disasters.

Additionally, monolithic construction provides excellent thermal insulation. The dense concrete walls help regulate temperature and reduce energy consumption, leading to lower heating and cooling costs for the building occupants.

Moreover, monolithic structures can be erected quickly. With the use of modern formwork systems, large sections of walls can be poured in a short period, accelerating the construction process and reducing labor costs.

The versatility of monolithic construction is another advantage. It allows for various architectural designs, from sleek modern facades to more intricate and artistic structures. The freedom in design is complemented by the flexibility to incorporate additional features like integrated insulation or built-in pipes and conduits.

In conclusion, monolithic construction offers a robust, energy-efficient, and flexible solution for building construction. Its ability to provide structural integrity, thermal insulation, speed of construction, and design versatility makes it a popular choice for architects, engineers, and contractors seeking sustainable and resilient building solutions.

Task 1. Переклад 15 слів з тексту

1. Іновація – innovation
2. Екосистема – ecosystem
3. Автономний – autonomous
4. Цифровий – digital
5. Розширений – augmented
6. Відновлюваний – renewable

7. Глобалізація – globalization
8. Інтерконектований – interconnected
9. Біорізноманітність – biodiversity
10. Сталевий – steel
11. Підземний – underground
12. Ефективність – efficiency
13. Вітрова енергія – wind energy
14. Сталева конструкція – steel structure
15. Інженерія – engineering

Task 2. Заповніть пропуски, використовуючи правильні слова

Monolithic construction involves the pouring of _____ to create a strong and seamless structure.

One of the advantages of monolithic construction is its structural _____. Pouring concrete without joints or seams enhances its strength and durability.

Monolithic buildings have excellent _____ properties, which help to reduce energy consumption and improve comfort.

The use of advanced _____ systems enables faster construction and improved efficiency in monolithic construction.

Monolithic structures offer greater _____ in architectural design compared to traditional construction methods.

Task 3

True or False: Monolithic construction refers to the use of pre-fabricated components in building construction.

True or False: Monolithic structures are more vulnerable to seismic activity compared to other construction methods.

True or False: Monolithic construction allows for greater design flexibility and customization.

True or False: Monolithic buildings are known for their superior energy efficiency and insulation properties.

True or False: Monolithic construction is a slower and more time-consuming method compared to conventional construction techniques.

Task 4. Запишіть три основні переваги монолітного будівництва, згадані в тексті, і для кожної переваги складіть короткий абзац, пояснюючи, чому ця перевага є важливою і як вона сприяє покращенню будівельних проєктів.

Task 5. Запитання

1. What is the main advantage of monolithic construction mentioned in the text?

The main advantage of monolithic construction is the creation of a seamless and strong structure.

2. How does monolithic construction contribute to energy efficiency? Monolithic buildings have excellent insulation properties, which help to reduce energy consumption for heating and cooling.

3. What are some examples of monolithic construction projects mentioned in the text?

Some examples of monolithic construction projects include the Burj Khalifa, Sydney Opera House, and Petronas Towers

4. How does monolithic construction offer design flexibility? Monolithic construction allows for greater architectural design freedom and customization due to the versatility of shaping concrete

5. What are two key differences between monolithic construction and other construction methods mentioned in the text?

Two key differences are the use of continuous concrete pouring in monolithic construction compared to prefabricated components in other methods and the greater design flexibility offered by monolithic construction.

Text 4: Innovations in construction

(Use of modular construction)

Modular constructions allow for the prefabrication of individual building elements, such as walls, floors, and roofs, in factory conditions. These elements are then quickly assembled on the construction site. This speeds up the construction process and reduces costs.

The use of modular constructions in construction offers several advantages. Here are a few of them:

1. Speed of construction: Manufacturing modular elements in factory conditions enables simultaneous work on both the construction site and the factory. This helps to shorten the construction time as the elements are ready for assembly at the beginning of the process. Additionally, using modular constructions helps to avoid delays due to weather conditions, as the factory production can proceed regardless of the weather.

2. High quality: Factory manufacturing of modular elements ensures greater precision and quality control compared to traditional construction methods. The constructions are made in conditions that allow for adherence to high-quality standards and the incorporation of advanced technologies and innovations.

3. Efficient use of resources: Modular constructions minimize material and resource waste since their production takes place in controlled conditions. More accurate planning and utilization of materials help to reduce costs and prevent excessive resource consumption.

4. Energy efficiency: Modular constructions can be designed with energy efficiency in mind, resulting in reduced energy consumption in buildings.

5. Flexibility and scalability: Modular constructions allow for easy modification or expansion of the building in the future. Elements can be easily dismantled and repositioned, enabling the adaptation of the building to changing needs. This is particularly beneficial for commercial or industrial buildings that may require reconfiguration or expansion in the future.

6. Standardization and quality control: Modular constructions often rely on standardized dimensions and specifications, simplifying manufacturing and assembly processes. Additionally, factory production enables greater quality control as the manufacturing processes can be more systematic and monitored.

Overall, the use of modular constructions in building construction increases efficiency, reduces costs, and improves the quality of construction projects. It is one of the modern approaches gaining popularity worldwide.

Word list:

- reduces costs – *зниження витрат*
- enables simultaneous work – *дозволяє працювати одночасно*
- adherence to high-quality standards – *дотримання високих стандартів якості*
- excessive resource consumption – *надмірне споживання ресурсів*
- Energy efficiency – *енергоефективність*
- Scalability – *масштабованість*
- Dismantle – *демонтувати*
- Repositioned – *перерозташовані*
- Reconfiguration – *перепланування*
- quality control – *контроль якості*
- rely on standardized dimensions and specifications – *базуються на стандартизованих розмірах і специфікаціях*

Task 1. Find in the text the English equivalents to the following:

- accelerates construction
- avoid setback
- in spite of the weather
- lower costs
- Avoid inappropriate use of resources
- Decreased energy usage in buildings
- The manufacturing processes can be made more organized and supervised

Task 2. Mark these sentences True/False:

1. Modular constructions allow for the manufacturing of individual building elements in factory conditions. (True/False)
2. The use of modular constructions in construction increases costs. (True/False)
3. Factory production of modular elements helps to avoid delays due to weather conditions. (True/False)
4. Modular constructions do not provide the flexibility to easily modify or expand a building in the future. (True/False)

5. The use of modular constructions in construction reduces energy consumption.
(True/False)

Task 3. Read the text below. For questions (1-5) choose the correct answer (A, B, or C)

1. What is the main advantage of using modular constructions in construction?

- a) Increased costs
- b) Reduced costs
- c) No impact on costs

2. Which aspect of quality management is improved when using modular constructions in construction?

- a) Decreased quality control
- b) Increased quality control
- c) No impact on quality control

3. Do modular constructions allow for easy modification or expansion of a building in the future?

- a) Yes
- b) No
- c) Depends on construction conditions

4. Does the use of modular constructions increase costs for heating and cooling the building?

- a) Yes
- b) No
- c) Depends on weather conditions

5. Do modular constructions help reduce construction time?

- a) Yes
- b) No
- c) Depends on the size of the building

Task 4. Questions about the text:

1. What are the main advantages of using modular constructions in construction?
2. How do modular constructions contribute to the acceleration of the construction process?
3. How do modular constructions reduce costs in construction?
4. How do modular constructions provide greater quality control compared to traditional construction methods?
5. What advantages does the use of modular constructions offer in terms of energy efficiency in buildings?
6. How do modular constructions provide flexibility and scalability in buildings?
7. What possibilities do modular constructions offer in terms of reconfiguration and relocation of building elements in the future?

Text 5: Innovation in Construction Assembly Works

The construction industry is constantly evolving, and one area that has seen significant innovation is assembly works. From the early stages of planning to the final touches, advancements in technology and methodologies have revolutionized the way construction projects are assembled and completed.

One notable innovation is the use of Building Information Modeling (BIM). BIM allows for the creation of digital 3D models that integrate various aspects of a construction project, including architectural design, structural engineering, and systems coordination. This technology enables better visualization, clash detection, and improved collaboration among project stakeholders. With BIM, assembly works can be planned and executed with greater precision, minimizing errors and rework.

Prefabrication and modular construction techniques have also brought remarkable innovation to assembly works. These methods involve the manufacturing of building components off-site, under controlled conditions. The prefabricated elements are then transported to the construction site for quick assembly. This approach not only speeds up the construction process but also enhances quality control and reduces waste. Modular construction allows for greater flexibility, enabling buildings to be easily modified or expanded as needed.

Another innovative development is the utilization of robotics and automation in assembly works. Robotic systems can perform repetitive tasks with high accuracy and efficiency, such as bricklaying, concrete pouring, and welding. These machines not only increase productivity but also enhance worker safety by handling hazardous or physically demanding tasks. Automation technologies, including robotic arms, drones, and 3D printers, have transformed the assembly process, making it faster, more precise, and cost-effective.

Furthermore, the integration of smart sensors and Internet of Things (IoT) devices in construction assembly works has opened up new possibilities for real-time monitoring and control. Sensors embedded in building components can provide data on structural integrity, temperature, humidity, and other parameters, ensuring quality assurance throughout the assembly process. IT devices enable remote monitoring and management of construction sites, optimizing resource allocation and reducing downtime.

Lastly, the implementation of advanced project management software has streamlined assembly works in construction. These software tools allow for effective scheduling, resource allocation, and task management. Project managers can track progress, identify bottlenecks, and make data-driven decisions to optimize assembly processes. Real-time collaboration platforms enable seamless communication among team members, contractors, and clients, facilitating efficient coordination and problem-solving.

In conclusion, innovations in assembly works have transformed the construction industry, leading to more efficient, sustainable, and cost-effective building processes. Technologies such as BIM, prefabrication, robotics, IT, and project management software have revolutionized how construction projects are planned, executed, and completed. These advancements continue to drive the industry forward, promising even more exciting developments in the future.

Task 1. Vocabulary:

1. Construction – будівництво
2. Assembly – монтаж
3. Works – роботи
4. Technology – технологія
5. Methodologies – методології

6. Planning – планування
7. Precision – точність
8. Prefabrication – попереднє виготовлення
9. Modular – модульний
10. Robotics – робототехніка
11. Automation – автоматизація
12. Sensors – сенсори
13. Real-time – в реальному часі
14. Collaboration – співпраця

Task 2. True or False:

- a) Building Information Modeling (BIM) is a technology that allows for the creation of digital 3D models and enhances collaboration among project stakeholders. (True)
- b) Prefabrication and modular construction methods have reduced construction time, improved quality control, and increased flexibility in building design. (True)
- c) The use of robotics and automation in assembly works has decreased worker safety and efficiency. (False)

Task 3. Fill in the missing words in the following sentence:

- a) "One notable _____ is the use of Building Information Modeling (BIM)."
- b) "Robotic systems can perform repetitive tasks with high accuracy and _____, such as bricklaying, concrete pouring, and welding."
- c) "These innovations continue to drive the industry _____, promising even more exciting developments in the future."

Task 4. Give answers to the questions:

1. How has Building Information Modeling (BIM) revolutionized assembly works in construction?
2. What are the benefits of prefabrication and modular construction techniques in assembly works?
3. How do robotics and automation contribute to the efficiency and safety of assembly works?

4. What role do smart sensors and Internet of Things (IT) devices play in monitoring assembly works?
5. How has advanced project management software improved the coordination and optimization of assembly processes?
6. What are some examples of repetitive tasks that can be performed by robotic systems in construction assembly?
7. How do innovations in assembly works contribute to the overall sustainability and cost-effectiveness of construction projects?

Список рекомендованої літератури

1. *Голіцинський Ю. Б.* Граматика : збірник вправ. – Київ : Арій, 2016. – 544 с.
2. *Mark Lloyd and Jeremy Day.* Active Grammar – Кембридж : Cambridge University Press, 2011. – 216 с.
3. *A history of BIM [Електронний ресурс]* / Режим доступу: <https://www.letsbuild.com/blog/a-history-of-bim>. – Назва з екрана.

Для нотаток

Навчально-методичне видання

ІНОЗЕМНА МОВА (АНГЛІЙСЬКА)

Методичні рекомендації
до практичних занять з англійської мови
для студентів спеціальності 192 «Будівництво та
цивільна інженерія»

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Підписано до друку 14.11.2023. Формат 60 x 84_{1/16}
Ум. друк. арк. 1,39. Обл.-вид. арк. 1,5.
Електронний документ. Вид. № 8/IV-24 Зам. № 8/I-24

Видавець і виготовлювач:
Київський національний університет будівництва і архітектури
Повітрофлотський проспект, 31, Київ, Україна, 03037

Свідоцтво про внесення до Державного реєстру суб'єктів
видавничої справи ДК № 808 від 13.02.2002