Course Outline

- The nature of the industry and types of construction organization.
- Engineering practices on the local level
- Engineering practices on the regional level
- Engineering practices on the international level
- Technical writing
- Types of technical writing
- Types of technical correspondence
- Research Methods
- Scientific writing
- Types of scientific writing
- Plagiarism
- Referencing
- Reports and presentation
Grading System

- Midterm Exam: 30%
- Final Exam: 50%
- Reports & Presentation: 20%

Hope You Success

Text Book & References

Text Book:

References:
- Supplementary notes
Communication & Contact

- You can use the Zajel system to post your comments and enquiries in the discussion forum.

- Frequently check the Zajel system to find assignments.

Before we start

- Attend the class on time
- Switch off your mobile
- Stop the side talks
- Be a smart listener
- Use your analytical skills
- Question every piece of information you acquire
The Construction Industry

- “Construction is a high hazard *industry* that comprises a wide range of activities involving construction, alteration, and/or repair. Examples include residential construction, bridge erection, roadway paving, excavations, demolitions, and large scale painting jobs.”

OSHA, 2016, Occupational Safety and Health Administration (https://www.osha.gov/doc/)

How big is the Construction Industry?

- The construction, renovation, and maintenance of buildings contribute from 10% to 40% of countries’ Gross Domestic Product (GDP).

- And, as a global average, represent 10% of country-level employment.

UNEP SBCI, 2009, Buildings and Climate Change: Summary for Decision-Makers. UNEP (p.5)
Where is your position???!!!

Depends on the type and function of the organization you enroll.

You may work with:

1. Construction firms
2. Design and consulting firms
3. Project management consulting firms
4. Owners/Clients
5. Governmental bodies
6. Material suppliers
Where is your position??!!

You may work as:

1. Site engineer
2. Design engineer
3. Project engineer
4. Construction manager
5. Project manager
6. QA/QC engineer
7. Safety engineer
8. Procurement engineer
9. Planning engineer
10. Cost engineer
11. Project control engineer
12. Cost control engineer
13. Planning manager
14. Cost manager
15. Contracts engineer
16. Contracts manager
17. Quantity surveyor

Company Organization Chart

An organization chart of a company, also known as organization structure, is a diagram that shows the structure of a company/entity and the relationships and authorities of its departments, staff, positions, and roles.
Example of an organization chart

Another Example of an organization chart
An organization chart of a project is a diagram that shows the structure of a project’s team and the relationships and authorities of its staff, positions, and roles.

An example of a project organization chart
Common construction labor trades

- Foreman
- Charge hand
- Concrete mason
- Stone mason
- Carpenter
- Shuttering carpenter
- Joinery carpenter
- Steel fixer
- Bricklayer
- Helper/Coolie
- Electrician
- Plumber
- Pipefitter
- Tile mason
- Plaster mason/plasterer
- Painter
- Welder
- Operator

Common construction equipment

- Backhoe/JCB
- Wheel loader
- Bulldozer
- Truck crane
- Tower crane
- Mobile crane
- Bobcat
- Forklift
- Boom loader
- Dumper
- Dump truck
- Concrete mixer
- Concrete pump
- Trailer (Low bed/High bed)
- Asphalt paver
- Roller compactor
- Plate compactor
Basic Acronyms in Construction Sector

- RFP: Request for Proposal
- RFQ: Request for Quotation
- RFI: Request for Information
- SE: Site Engineer
- PM: Project Manager
- CM: Construction Manager
- A/E: Architect/Engineer
- IR: Inspection Request

Frequently used Forms and Documents

- Daily Report
- Weekly Report
- Monthly Report
- Monthly Invoices
- Time Schedules
- Schedule of values
- Material Approval
- Inspection Request
- Notice to Proceed
Report Assignment

- Write a report consists of two A4 pages (Maximum 2,000 words) that answers the following questions:

1. What is the Palestinian Engineers Association? And what does it do?
2. What are the types and classifications of engineering offices?
3. What is the accreditation and qualifying policy for member engineers?

Due date March 02, 2017 at 8:05 AM.
Late submission will not be accepted.

Part II
Research Methodology
&
Technical Writing
What is research?

- The systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions.

  Oxford Dictionaries (online)

- A detailed study of a subject, especially in order to discover (new) information or reach a (new) understanding.

  Cambridge Dictionaries (online)

The Research Process

Research Onion, adapted from (Saunders et al., 2009)
Research Process

- Hypothesis or research questions formulation
- Literature review
- Research design
- Data collection
- Data analysis
- Results and conclusion

Types of scientific publications

1. Scientific articles published in scientific journals
2. Authored Books
3. Edited books
4. Conference proceedings issued by scientific conferences
5. Governmental reports
6. Technical reports
7. Dissertations/thesis
8. Trade publications (Be careful, why?)
Plagiarism

Researchers do not claim the words and ideas of another as their own; they give credit where credit is due (APA Ethics Code Standard 8.11, Plagiarism). Quotation marks should be used to indicate the exact words of another. Each time you paraphrase another author (i.e., summarize a passage or rearrange the order of a sentence and change some of the words), you need to credit the source in the text. The following paragraph is an example of how one might appropriately paraphrase some of the foregoing material in this section.

As stated in the sixth edition of the Publication Manual of the American Psychological Association (APA, 2010), the ethical principles of scientific publication are designed to ensure the integrity of scientific knowledge and to protect the intellectual property rights of others. As the Publication Manual explains, authors are expected to correct the record if they discover errors in their publications; they are also expected to give credit to others for their prior work when it is quoted or paraphrased.

(Citation: APA, 2010, p. 16) 27

Citation & Referencing

- **Citation**: the process of referring to, or using others thoughts, ideas, opinions, research findings, arguments, and theories in your research.

- If you write, use, or refer to specific information or data from a specific source in your research, you should mention the source in the body of your text and list the source in your reference list.

- The format of the list of references and citation varies depending on the style that you use (e.g. Vancouver style and APA style).
When to cite?

- Cite the work of those individuals whose ideas, theories, or research have directly influenced your work. They may provide key background information, support or dispute your thesis, or offer critical definitions and data.

- **Citation of an article implies that you have personally read the cited work.**

- In addition to crediting the ideas of others that you used to build your thesis, provide documentation for all facts and figures that are not common knowledge.

How to cite?

- The basic elements of the citation are:

  1. Name of the author(s)
  2. Year of publication
  3. Page number or page range
  4. The exact page number must be included in direct quotations, otherwise the citation is incomplete.
When not to cite?

Do not cite:

1. Your own words, ideas, research findings.

2. Common knowledge and common facts available in several sources. (Example: the earth rotates around the sun which causes the four seasons.)

References

The list of all sources that you have cited.

Different referencing style are used in scientific publications.
In-text citation example

APA style

The terms **green buildings**, **high performance buildings**, **sustainable buildings**, **sustainable construction**, **high performance construction**, or **green construction** are used interchangeably (Kats et al., 2003; Kibert, 2012; USGBC Research Committee, 2008; Woolley et al., 2005). Intrinsically, sustainable construction should take into account the environmental aspects through the whole life cycle of a facility, including material acquisition, installation, operation, disposal, and recycling. However, the green building definition varies and there are numerous definitions for the green building (Comstock et al., 2012; Kibert, 2007). Yudelson (2008, p. 13) defines the green building as: "A high-performance property that considers and reduces its impact on the environment and human health". According to Yudelson (2008, p. 13), the green building is designed to use less energy and water as well as to reduce the life cycle environmental impact of the used material.


List of References example

APA style


The terms *green buildings, high performance buildings, sustainable buildings, sustainable construction, high performance construction*, or *green construction* are used interchangeably \[2,12,19,20\]. Intrinsically, sustainable construction should take into account the environmental aspects through the whole life cycle of a facility, including material acquisition, installation, operation, disposal, and recycling. However, the green building definition varies and there are numerous definitions for the green building \[21,22\]. Yudelson \[23\] defines the green building as: “A high-performance property that considers and reduces its impact on the environment and human health”. According to Yudelson \[23\], the green building is designed to use less energy and water as well as to reduce the life cycle environmental impact of the used material.


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A single case is used because it is a critical, extreme, or unique case (Flyvbjerg, 2006; Hancock & Algozzine, 2006; Yin, 2009, p. 47), or it is a typical case representing a group of cases (Saunders et al., 2009, p. 146; Seawright & Gerring, 2008). Yin (2009, p. 52) contends that a single case study is a common approach in case study research, he says:

Overall, the single-case design is eminently justifiable under certain conditions where the case represents (a) a critical test of existing theory, (b) a rare or unique circumstance, or (c) a representative or typical case, or where the case serves a (d) revelatory or (e) longitudinal purpose.

(Yin, 2009, p. 52)

Saunders et al. (2009, p. 141) describes seven research strategies a researcher may choose in conducting a research which are: experiment, survey, case study, action research, grounded theory, ethnography, and archival analysis. The authors contend that "no research strategy is inherently superior or inferior to any other", based on the need, a researcher has an option to choose one or more strategy in answering the research questions. However, each strategy has certain conditions under which it can be adopted.
References Format

Printed Book:

Author, A A (1967). Title of work. Location: Publisher.


E-Book:


Printed Report:


Online-Report:


References Format

Printed Report:


Online-Report:
