



EE548

Design of Electrical and Electromechanical Systems for Commercial and Industrial Installations

Course Contents

- ***Week Number 1:*** Introduction to electrical installations
- ***Week Number 2:*** Electrical engineering projects
- ***Week Number 3:*** Design of electrical wiring systems
- ***Week Number 4:*** Design of electrical wiring systems
- ***Week Number 5:*** Design of electrical wiring systems
- ***Week Number 6:*** Design of electrical wiring systems
- ***Week Number 7:*** Design of electrical wiring systems

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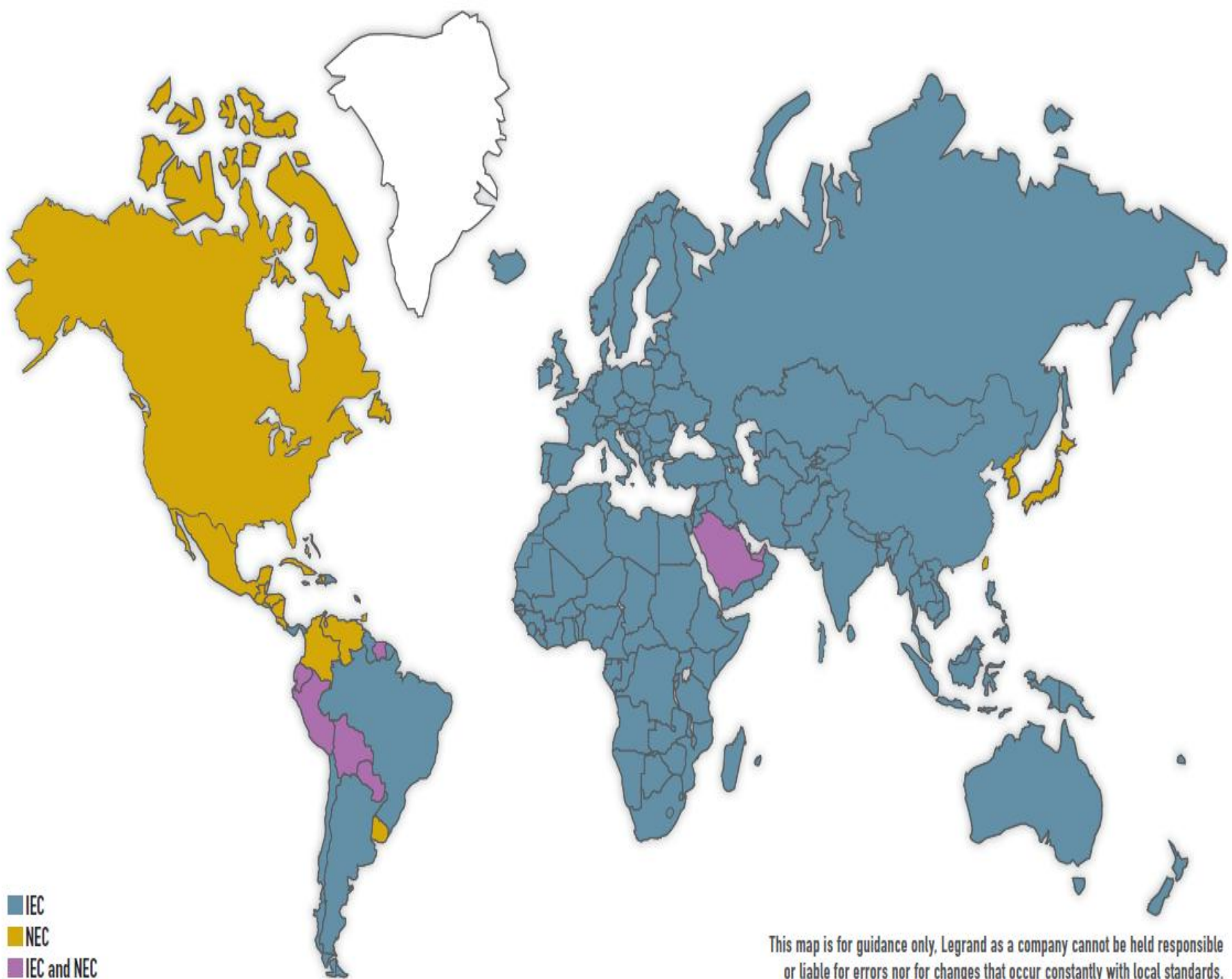
- ***Week Number 8:*** **Design of lighting systems**
- ***Week Number 9:*** **Design of lighting systems**
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- ***Week Number 11:*** **Heating and Air Conditioning**
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- *Week Number 16: Final Exam*



Codes and Standards



- IEC
- NEC
- IEC and NEC

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IEC and NEC

- The **IEC 60364 standard**, “Electrical Installations of Buildings,” is copyrighted by the **International Electrotechnical Commission**, with headquarters in Geneva, Switzerland, although the right of reproduction and distribution in any country lies with the national committee of that country. In the **U.S., ANSI** holds the rights for distribution of IEC standards.
- The “**National Electrical Code**” or “**NEC**” are registered trademark of the National Fire Protection Association (**NFPA**)

IEC and NEC

- In general, while the **NEC** evolved along with the growth of electrical systems in **North America** more than 100 years ago in order to establish a uniform level of safety, the development of **IEC 60364** documents set in **1969** for reasons of harmonization of electrical installation rules to facilitate trade among **European countries**.

IEC and NEC

- **IEC 60364** is a collection of documents that define fundamental principles, practices, and performance requirements which reflect the European concept of wiring and distribution systems.
- The **NEC** is a set of specific rules intended to be used for design, installation, and uniform enforcement of electrical system installations based on North American principles and practices.

62 IEC members



AUSTRALIA	EGYPT	KOREA, REP. OF	SAUDI ARABIA
AUSTRIA	ERITREA (PM)	LATVIA (AM)	SINGAPORE
BELARUS	ESTONIA (AM)	LITHUANIA (AM)	SLOVAKIA
BELGIUM	FINLAND	LUXEMBURG	SLOVENIA
BOS.-HERZO. (AM)	FRANCE	MALAYSIA	SOUTH AFRICA
BRAZIL	GERMANY	MEXICO	SPAIN
BULGARIA	GREECE	NETHERLANDS	SWEDEN
CANADA	HUNGARY	NEW ZEALAND	SWITZERLAND
CHINA	ICELAND (AM)	NORWAY	THAILAND
COLOMBIA (PM)	INDIA	PAKISTAN	TURKEY
COSTA RICA (PM)	INDONESIA	PHILIPPINES	UKRAINE
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CUBA (PM)	ISRAEL	PORTUGAL	USA
CYPRUS (AM)	ITALY	ROMANIA	URUGUAY (PM)
CZECH REP.	JAPAN	RUSSIAN FED.	YUGOSLAVIA
DENMARK	KENYA (PM)		

AM = Associate member

PM = Pre-associate member

British Standards

- British Standard **BS 7671** "Requirements for electrical installations" is the national standard in the **United Kingdom** for low voltage electrical installations.
- The **IET** (Institution of Engineering and Technology) has published **wiring regulations** in the United Kingdom since 1882.

BS 7671

- Since their **15th** edition (1981), these regulations have closely followed the corresponding international standard **IEC 60364**.
- Today, they are largely based on the European Committee for Electrotechnical Standardization (**CENELEC**) harmonization documents, and therefore are technically very similar to the current wiring regulations of other European countries.





THANKS