COURSE OVERVIEW SE0401

Seismic Design of Structures According to ASCE – Introduction Level

Course Title
Seismic Design of Structures According to ASCE – Introduction Level

Course Date/Venue
Please see page 2

Course Reference
SE0401

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

3.0 CEUs (30 PDHs) AWARD

H-STK© INCLUDED

Course Description

This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.

This advanced course provides in-depth knowledge and practical skills for the seismic and wind design of reinforced concrete structures based on the latest International Building Code (IBC) and American Society of Civil Engineers (ASCE 7) standards. Participants will explore structural behavior under dynamic and lateral loads, with a focus on design principles, detailing requirements, and performance-based engineering for earthquake and wind-resistant buildings.

During this interactive course, participants will learn the response of concrete buildings to seismic codes and seismic design requirements of the 2009 IBC; the response of concrete building to wind forces, wind design requirements of the 2009 IBC & ASCE 7-05 and alternate all-heights method; the office building with dual and moment-resisting frame systems; the residential building with shear wall-frame interactive and building frame systems; the school building with moment-resistant frame system and residential building with bearing wall system; the parking structure with building frame system; and the design data, seismic load analysis, wind load analysis and design for combined load effects.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain an advanced knowledge on seismic and wind design of reinforced concrete
- Discuss response of concrete buildings to seismic codes and seismic design requirements of the 2009 IBC
- Describe response of concrete building to wind forces, wind design requirements of the 2009 IBC & ASCE 7-05 and alternate all-heights method
- Recognize office building with dual and moment-resisting frame systems as well as residential building with shear wall-frame interactive and building frame systems
- Identify school building with moment-resistant frame system and residential building with bearing wall system
- Describe parking structure with building frame system and apply design data, seismic load analysis, wind load analysis and design for combined load effects

Exclusive Smart Training Kit - H-STK®

*Participants of this course will receive the exclusive "Haward Smart Training Kit" (**H-STK®**). The **H-STK®** consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.*

Who Should Attend

This course is intended for structural engineers who need to learn how to apply the IBC seismic and wind provisions to the design detailing of reinforced concrete buildings. Educators, code enforcement personnel and the plan check community will also benefit from attending the course.

Course Date/Venue

Session(s)	Date	Venue
1	July 06-10, 2025	Al Buraimi Meeting Room, Sheraton Oman Hotel, Muscat, Oman
2	October 19-23, 2025	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
3	February 01-05, 2026	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
4	April 05-09, 2026	Al Buraimi Meeting Room, Sheraton Oman Hotel, Muscat, Oman

Course Fee

US$ 5,500 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

Haward's certificates are accredited by the following international accreditation organizations: -

- British Accreditation Council (BAC)

  Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

- The International Accreditors for Continuing Education and Training (IACET - USA)

  Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

  Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

  Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:

Prof. Engin Aktas, PhD, MSc, BSc, is an **international expert** with over **25 years** of extensive experience in **Structural Reliability**, **Earthquake Engineering**, **Design of Concrete and Steel Structures**, **Structural Damage Assessment & Safety Evaluation** and **Structural Health Monitoring**. He has been a **Senior Professor** to all personnel ranging from students to post graduate students at Universities and industrial clients. He has been teaching in the areas of **Theory of Matrix Structural Analysis**, **Engineering Mechanics**, **Mechanics of Materials**, **Civil Engineering System Analysis**, **Statistics for Civil Engineers**, **Structural Dynamics**, **Operations Research**, **Structural Optimization**, **Design of Reinforced Concrete Structures**, **Design of Steel Structures and Structural Reliability**.

During his career life, Professor Aktas performed the design, construction and installation of numerous buildings and industrial structures. Previously, he was the **Structural Design Engineer & Civil Engineer** with an international company handling multi-million design projects. He is renowned for his enthusiasm and tremendous instructing skills. Moreover, he had been a **Post-Doctoral Fellow** of **NRL/ASEE** and the recipient of the **Naval Research Laboratory/American Society for Engineering Education Fellowship** for his dedication and contributions to his field and was engaged with the **US Naval Research** for a project on "**Damage Detection on Composite Wing of Unmanned Air Vehicle using FBG sensors**".

Professor Aktas has **PhD** and **Master** degrees in **Civil Engineering** from the **University of Pittsburgh** (**USA**) and **Bachelor's** degree in **Civil Engineering** from **Middle East Technical University** (**Turkey**). Further, he had served as a **Post-Doctorate** in **US Naval Research Laboratory** (**ASEE/NRL Fellow**) in **Washington DC**, **USA**. Moreover, he is a **Certified Instructor/Trainer** and a well-respected member of the **Union of Chambers of Engineers and Architects of Turkey**, the **Earthquake Engineering Association of Turkey** and the **International Association for Bridge Maintenance and Safety** (**IABMAS**).

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

30% Lectures
20% Practical Workshops & Work Presentations
30% Hands-on Practical Exercises & Case Studies
20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0900	***Introduction***
0900 – 0930	*Break*
0930 – 1030	***Earthquake-Resistant Design*** *Background • Response of Concrete Buildings to Seismic Codes • Seismic Design Requirements of the 2009 IBC*
1030 – 1130	***Wind-Resistant Design*** *Wind Forces • Response of Concrete Building to Wind Forces • Wind Design Requirements of the 2009 IBC • Wind Design Requirements of ASCE 7-05 • Alternate All-Heights Method*
1130 – 1230	***Office Building with Dual and Moment-Resisting Frame Systems*** *Design for SDC A (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
1230 – 1245	*Break*
1245 – 1420	***Office Building with Dual and Moment-Resisting Frame Systems (cont'd)*** *Design for SDC C (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0930	***Office Building with Dual and Moment-Resisting Frame Systems (cont'd)*** *Design for SDC D (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
0930 – 0945	*Break*
0945 – 1100	***Office Building with Dual and Moment-Resisting Frame Systems (cont'd)*** *Design for SDC E (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
1100 – 1215	***Residential Building with Shear Wall-Frame Interactive and Building Frame Systems*** *Design for SDC A (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
1215 – 1230	*Break*
1230 – 1320	***Residential Building with Shear Wall-Frame Interactive and Building Frame Systems (cont'd)*** *Design for SDC B (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*

1320 – 1420	***Residential Building with Shear Wall-Frame Interactive and Building Frame Systems (cont'd)*** *Design for SDC C (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0930	***Residential Building with Shear Wall-Frame Interactive and Building Frame Systems (cont'd)*** *Design for SDC D – Southern U.S. (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
0930 – 0945	*Break*
0945 – 1100	***Residential Building with Shear Wall-Frame Interactive and Building Frame Systems (cont'd)*** *Design for SDC D – California (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
1100 – 1215	***Residential Building with Shear Wall-Frame Interactive and Building Frame Systems (cont'd)*** *Design for SDC E (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
1215 – 1230	*Break*
1230 – 1320	***School Building with Moment-Resistant Frame System*** *Design for SDC B (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
1320 – 1420	***School Building with Moment-Resistant Frame System (cont'd)*** *Design for SDC C (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0930	***School Building with Moment-Resistant Frame System (cont'd)*** *Design for SDC D – Southern U.S. (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
0930 – 0945	*Break*
0945 – 1100	***School Building with Moment-Resistant Frame System (cont'd)*** *Design for SDC D – California (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
1100 – 1215	***Residential Building with Bearing Wall System*** *Design for SDC A (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
1215 – 1230	*Break*
1230 – 1320	***Residential Building with Bearing Wall System (cont'd)*** *Design for SDC B (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
1320 – 1420	***Residential Building with Bearing Wall System (cont'd)*** *Design for SDC C (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 – 0830	***Residential Building with Bearing Wall System*** *Design for SDC D (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
0830 – 0930	***Residential Building with Bearing Wall System*** *Design for SDC E (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
0930 – 0945	*Break*
0945 – 1100	***Parking Structure with Building Frame System*** *Design for SDC B (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
1100 – 1200	***Parking Structure with Building Frame System (cont'd)*** *Design for SDC C (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
1200 – 1215	*Break*
1215 – 1345	***Parking Structure with Building Frame System (cont'd)*** *Design for SDC D (Design Data, Seismic Load Analysis, Wind Load Analysis & Design for Combined Load Effects)*
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-

Course Coordinator

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