

LIVE

STEEL-STR-005

SQVe
Engineering

ONLINE COURSE

DESIGN OF STEEL STRUCTURES

AS PER

AISC 360-22

ALONG WITH

SOFTWARE

**STAAD.Pro
RAM Connection**

1

Time :
8:30 PM TO
10:00 PM IST

15-MAR-23

TO

19-APR-23

Bhavin Shah

Link : <https://sqveconsultants.com/steel-str-005>

Email : steel@sqveconsultants.com

INTRODUCTION

In last ~2 years of time, we have launched number of interesting online courses (STEEL-STR-001, STEEL-STR-002 & STEEL-STR-004) related to design of steel structures along with connection design as per IS 800:2007. The courses were designed mainly based on areas wherein industry is facing practical difficulties. Fundamentals related to design of steel structure are covered along with software applications. The content covered is extract of numerous inhouse exercises carried out by Bhavin Shah in nearly a decade of a time in different organisations. We have received quite encouraging feedback from the participants for the courses and also we have received number of requests for launching the similar kind of online courses for American standards.

In view of the above, we are glad to launch an online course **STEEL-STR-005: Design of steel structures as per AISC 360-22**.

The course will cover discussion on important clauses of the code **AISC 360-22, AISC 341-16, AISC 358-16** as well as application of same in the software **STAAD.Pro & RAM connection**. The course will cover the important areas such as stability of structures, notional loads, P-delta analysis, direct analysis method, design of tension member, design of compression members with and without slender elements, design of member for bending, design of member for combined forces, design of simple connections, design of moment connections, earthquake resistant design aspects, prequalified connection, application of wind load and seismic load in the software, couple of case studies, etc.

Recorded sessions of the earlier online courses can be accessed. For more details, please write to us at email address: steel@sqveconsultants.com

WHO SHOULD ATTEND?

This course will be useful for following :

- ✓ **Practicing Structural Consultants**
- ✓ **Owner's consultant**
- ✓ **Proof checking consultants**
- ✓ **Senior Structural Engineers in the company**
- ✓ **Junior Structural Engineers in the company**
- ✓ **PEB design engineers**
- ✓ **Civil/structural engineers who do not have prior exposure of steel structures and want to learn from first fundamental**
- ✓ **Post Graduate students in Structural Engineering**
- ✓ **Civil engineering students who are interested in Structural Engineering.**

WHAT IS UNIQUE ABOUT THIS COURSE?

- ✓ The course is designed by the **experienced engineer** (Mr. Bhavin Shah) who have more than two decades of experience in the field of structural engineering.
- ✓ The entire course is designed from the **practical aspects** which can be readily used in the real projects.
- ✓ The course is designed to have an **interactive mode** so that the problems / doubts of the participants can be addressed effectively.
- ✓ A WhatsApp group will be created for **quick communication** between the participants and the faculty. The participants will be able to share the discussion points, doubts, queries, etc. in the group. The details in the group will be collated for further discussion in the next sessions.
- ✓ All the sessions will be recorded and recording of each session will be shared **by next day**. If someone miss out the live session then he/she can go through the recording before attending the next session. The participants can share the doubts/queries in the WhatsApp group, after going through the recording which will be addressed in the next session.
- ✓ The important clauses of the IS code will be discussed along with the software **STAAD.Pro** and **RAM connection**.
- ✓ **Recording** will be available with all the participants for **180 days**.
- ✓ **Certificate** will be issued on successful completion of the online course (minimum 80% attendance is required.).
- ✓ The course is designed as a **process of learning together**.

COURSE FACULTY

Bhavin Shah – Founder & CEO, SQVe Consultants



Mr. Bhavin Shah is passionate about Engineering profession with two decades of experience. He is having a dream for enhancing the engineering profession in different organisations. He completed graduation in Civil Engineering and Masters in Structures from Sardar Patel University. He is having unique experience of working in the specialized firm of civil / structural consultancy which grew as multidisciplinary firm (VMS), large multidisciplinary firm (L&T Chiyoda Ltd.) and owner based engineering set up (Adani Infra (I) Ltd.). He worked in different organisations at different levels, starting from junior design engineer to CEO. He is Founder & CEO of **SQVe Consultants**. He is pursuing Ph.D. in Structural Engineering related to earthquake resistant design of industrial steel structures.

METHODOLOGY

- ✓ The entire course is designed in the **ONLINE mode**.
- ✓ The course will spread over **~one month** with **approximate 24+ contact hours**.
- ✓ During two months of a time, the interaction can be done with faculty and the participants using **WhatsApp**.
- ✓ The participants will be encouraged to share their **real project problems** during the course. We will discuss possible solutions for the same.
- ✓ Two months are considered so that the participants have **ample opportunities** for raising their doubts / queries related to the subject.
- ✓ The online sessions will be conducted using **ZOOM** software.
- ✓ The course is designed as a **process of learning together**.

COURSE SCHEDULE

Start Date	15-MAR-2023
End Date	19-APR-2023
Total contact hours	24+ (Sessions will be arranged on every Monday, Wednesday & Friday from 8:30 PM IST to 10:00 PM IST.)
Details of each session	Please refer subsequent page for details of each session.

FEES FOR THE COURSE**

For participant <u>from India</u>	Cost per participant shall be 11500 INR (inclusive of 18% GST).
For participant <u>from outside India</u>	Cost per participant shall be 180 USD .

**Discount offered:

- ✓ **For continuous learner:** If you have attended earlier one course of SQVe Consultants than **5%** of discount will be offered. For prior two courses, **10%** of discount will be offered. For three or more prior courses, **15%** of discount will be offered. To avail the discount, please send us an email at : steel@sqveconsultants.com . We will arrange to send an invoice considering the discount for online payment.

- ✓ **Group participation** from a company or institute is encouraged to get the discounts on this course. For more details, pl contact us at the above mentioned email address.

HOW TO REGISTER FOR THE COURSE?

Please click on the following link and thereafter click on “**Register Now**” button at bottom of the page. You will be directed to the **payment page**. Your registration will be confirmed after receipt of the payment at portal.

<https://sqveconsultants.com/steel-str-005>

Important notes:

The above payment gateway will accept card only. If you prefer other type of payments such as net banking, UPI, Goggle Pay, etc. then please message us. We will arrange details for the same.

Payment gateway at the above-mentioned portal is configured only for **Indian participants**. Interested foreign engineers can contact us at the email address : steel@sqveconsultants.com. An invoice will be shared through **PayPal** for online payment.

Kindly note that there are limited seats.

Your any queries/ doubts related to the course shall be addressed to the above mentioned email address.

SCHEDULE OF THE COURSE : STEEL-STR-005

Session no.	Brief details	Date	Time (IST)
1	Overview of AISC 360-22 & Design requirements <ul style="list-style-type: none"> ⇒ Approach to design of steel structures ⇒ Working out structural system ⇒ Orientation of columns and placement of bracings ⇒ Quick overview of AISC 360-22 ⇒ Brief of changes with reference to earlier code ⇒ Design basis ⇒ Loads and load combinations, etc. 	15-MAR-23 (Wednesday)	8:30 PM TO 10:00 PM
2	Stability check as per AISC 360-22 and software (Part 1) <ul style="list-style-type: none"> ⇒ General stability requirements ⇒ Effective length method ⇒ Use of notional loads ⇒ Direct analysis method of design ⇒ Comparison of Direct analysis method & Effective length method, etc. 	17-MAR-23 (Friday)	8:30 PM TO 10:00 PM
3	Stability check as per AISC 360-22 and software (Part 2) <ul style="list-style-type: none"> ⇒ Software application for P Delta analysis ⇒ Errors associated with P Delta analysis ⇒ Parameters for Direct analysis method in software ⇒ Software application for Direct analysis method, etc. 	20-MAR-23 (Monday)	8:30 PM TO 10:00 PM
4	Design of Tension member as per AISC 360-22 and software <ul style="list-style-type: none"> ⇒ Slenderness limitation ⇒ Yielding of the gross area and rupture of the net area ⇒ Effective net area ⇒ Shear lag for tension members ⇒ Performing design of tension member in software ⇒ Comparison of results from software with manual calculations, etc. 	22-MAR-23 (Wednesday)	8:30 PM TO 10:00 PM

Session no.	Brief details	Date	Time (IST)
5	<p>Design of Compression member as per AISC 360-22 and software</p> <ul style="list-style-type: none"> ⇒ Discussion on design of compression member ⇒ Understanding limit state of flexural buckling ⇒ Members without slender elements ⇒ Members with slender elements ⇒ Design parameters in software for compression member ⇒ Performing design of compression member in software ⇒ Comparison of results from software with manual calculations, etc. 	24-MAR-23 (Friday)	8:30 PM TO 10:00 PM
6	<p>Design of member under bending as per AISC 360-22, Lateral torsional buckling and software</p> <ul style="list-style-type: none"> ⇒ Discussion on design of member under pure bending ⇒ Understanding limit state of lateral torsional buckling ⇒ Discussion on importance of “Cb” parameter ⇒ Design parameters in software for member under pure bending ⇒ Performing design of member in the software for pure bending ⇒ Comparison of results from software with manual calculations ⇒ Possibilities of cost optimisation, etc. 	27-MAR-23 (Monday)	8:30 PM TO 10:00 PM
7	<p>Design of member under axial compression + bending in both directions as per AISC 360-22 and software</p> <ul style="list-style-type: none"> ⇒ Discussion on combined effect of different types of forces ⇒ Combine action of Flexure and Axial force ⇒ Combine action of Flexure + Axial force + Shear ⇒ Combine action with Torsion ⇒ Design parameters in software for member having combined forces ⇒ Performing design of member in the software for combined forces ⇒ Comparison of results from software with manual calculations, etc. 	29-MAR-23 (Wednesday)	8:30 PM TO 10:00 PM
8	<p>Fundamentals of steel connection design</p> <ul style="list-style-type: none"> ⇒ Structural behaviour and connections ⇒ Importance of conceptual thinking ⇒ How type of connection to be decided? 		

Session no.	Brief details	Date	Time (IST)
	<ul style="list-style-type: none"> ⇒ Iterative process of connection design and structural analysis, etc. ⇒ Importance of connection design in the structure ⇒ Overall philosophy of the connection design, etc. ⇒ Shear connection ⇒ Positioning for holes ⇒ Slip resistant connection ⇒ Block shear ⇒ Prying forces, etc. ⇒ Welding consumables ⇒ Type of welds ⇒ Design resistance of Fillet welds ⇒ Design resistance of Butt welds ⇒ Long joints, etc. 	31-MAR-23 (Friday)	8:30 PM TO 10:00 PM
9	<p>Different types of Simple connections as per AISC 360-22 and RAM connection software</p> <ul style="list-style-type: none"> ⇒ Beam to beam and beam to column connections ⇒ Partial depth end plates ⇒ Full depth end plates ⇒ Fin plates ⇒ Column splices ⇒ Column bases ⇒ Bracing connections ⇒ Connection design using RAM connection software 	3-APR-23 (Monday)	8:30 PM TO 10:00 PM
10	<p>Design of different types of Moment connections as per AISC 360-22 and RAM connection software</p> <ul style="list-style-type: none"> ⇒ Bolted beam to column connection ⇒ Welded beam to column connection ⇒ Splices ⇒ Column bases ⇒ Connection design using RAM connection software, etc. 	5-APR-23 (Wednesday)	8:30 PM TO 10:00 PM
11	<p>Earthquake resistant design as per AISC 341-16</p> <ul style="list-style-type: none"> ⇒ General design requirements ⇒ Different types of moment frames such as OMF, IMF, SMF, etc. ⇒ Different types of braced frames such as OCBF, SCBF, EBF, BRBF, etc. ⇒ Seismic design provisions in the software, etc. 	7-APR-23 (Friday)	8:30 PM TO 10:00 PM

Session no.	Brief details	Date	Time (IST)
12	<p>Prequalified connections as per AISC 358-16 and design using RAM connection software</p> <ul style="list-style-type: none"> ⇒ Design requirements ⇒ Bolting requirements ⇒ Welding requirements ⇒ Reduced beam section Moment connection ⇒ Design of connections using RAM connection software, etc. 	10-APR-23 (Monday)	8:30 PM TO 10:00 PM
13	<p>Application of wind load and seismic load on the structure in the software</p> <ul style="list-style-type: none"> ⇒ Wind load as per ASCE-7 in the software ⇒ Different parameters for wind load generation in the software ⇒ Seismic load as per ASCE-7 in the software ⇒ Different parameters for seismic load generation in the software, etc. 	12-APR-23 (Wednesday)	8:30 PM TO 10:00 PM
14	<p>Case study – Design parameters & interpretation of results for shed type of structure</p> <ul style="list-style-type: none"> ⇒ Overview of structural system ⇒ How to decide braced bay locations? ⇒ Modelling of tapered section ⇒ Load application ⇒ Typical Design parameters in the software ⇒ Performing design of few members in software ⇒ Steel connection design using RAM connection software, etc. 	14-APR-23 (Friday)	8:30 PM TO 10:00 PM
15	<p>Case study – Design parameters & interpretation of results for industrial structure</p> <ul style="list-style-type: none"> ⇒ Overview of structural system ⇒ Braced bay vs moment resisting bays ⇒ Load applications from equipment, piping, etc. ⇒ Typical Design parameters in the software ⇒ Performing design of few members in software ⇒ Steel connection design using RAM connection software, etc. 	17-APR-23 (Monday)	8:30 PM TO 10:00 PM
16	<p>Open discussion</p> <ul style="list-style-type: none"> ⇒ Concluding remarks ⇒ Discussion on balance queries/doubts from the participants ⇒ Way-forward 	19-APR-23 (Wednesday)	8:30 PM TO 10:00 PM

About SQVe Consultants

SQVe Consultants (SQVe) is a recently established company with a vision of enhancing the engineering profession. Name of the company is derived from the first letters of major goals of engineering, i.e. **S**chedule adherence, **Q**uality assurance & **V**alue engineering. For success of any project, it is required that all these goals are considered simultaneously in the projects. However, in today's fast track projects, it is indeed difficult to address all the goals in the design engineering cycle simultaneously. We believe that for achieving these desired goals, there are many developmental activities (off-project) required in the organisations for continual improvement. Our all services are designed to assist different organizations to achieve the engineering goals. We intend to collaborate with the different organisations for long term basis and aim towards enhancing the engineering profession through our unique services. Our values are Innovation, Commitment & Integrity. Your partner for achieving engineering goals!

We also provide coaching/mentoring to the structural engineers through one-on-one sessions. Please get in touch with us for any requirements related to online training related to civil/structural engineering as well as in the area of people management.

For more details, please refer website : <https://sqveconsultants.com>
You may contact us at email address : contact@sqveconsultants.com

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