

# AO Spine Course—Advanced MISS Techniques (With Human Anatomical Specimens)

May 09–10, 2026

Cambridge, United Kingdom

**Preliminary Program**



## Mission

The AO's mission is promoting excellence in patient care and outcomes in trauma and musculoskeletal disorders.

## Purpose statement

The global academic spine community promoting excellence in patient care and outcomes

## The AO Spine principles

1



### Stability

Stabilization to achieve a specific therapeutic outcome

2



### Alignment

Balancing the spine in three dimensions

3



### Biology

Etiology, pathogenesis, neural protection, and tissue healing

4



### Function

Preservation and restoration of function to prevent disability

# Welcome

Dear participant,

On behalf of AO Spine, we warmly welcome you to Cambridge, a beautiful city, rich in history and traditions.

It is recognized that traditional 'open' spinal surgery carries risk for injury to back muscles, it is associated with greater blood loss, long hospital stays, analgesia usage and prolonged recovery times.

Minimally invasive spinal (MIS) surgery techniques and navigation for spinal surgery are rapidly evolving and have shown to reduce the risks of open approaches.

We recognize that these techniques are challenging and with these considerations in mind, this course led by expert faculty, provides a forum for exposure to the latest cutting-edge techniques used in MIS spinal surgery and navigation.

Looking forward to seeing you in Cambridge.

Sincerely yours,



**Richard Bransford**  
Chairperson AO Spine  
Education Commission



**Juan Emmerich**  
Chairperson AO Spine  
International Board

# Goal of the event

This course covers advanced techniques of minimally invasive spine surgery, focusing on MIS TLIF, LLIF, and ALIF procedures. It provides advanced training by giving an overview of evidence-based, state-of-the-art management strategies, active learning through case-based discussions, as well as practical exercises with expert faculty. *(in case of optional exercises, please modify the goal by listing the exercises at the end of the first sentence)*

## Target participants

This course is designed for:

- Spine surgeons (orthopedic surgeons and neurosurgeons) with at least 3 years of experience in spine surgery
- Surgeons with some experience in MISS techniques, but not with complex MISS

## Event description

This 2-day course is designed to develop surgical skills in minimally invasive surgery techniques. Participants have the opportunity to share their experiences with colleagues and leading regional experts to gain the best possible understanding of minimally invasive spine surgery.

The techniques covered in this course include MIS TLIF, ALIF, and LLIF, Endoscopic and Robotic assisted techniques

## Learning objectives

At the end of this course, participants will be able to:

- Identify the different types of approaches that can be performed in minimally invasive surgery
- Recognize the anatomical structures that must be identified before and intraoperatively
- Diagnose the patient's problem by correlating clinical findings with imaging and workup
- Recognize appropriate indications based on the patient's clinical picture and images, and the surgeon's MISS skills and experience
- Select the appropriate MISS procedure for the pathology and indication, and recognize when MISS is not the appropriate option
- Correctly configure the technology, operating room, and equipment for the procedure
- Perform MISS fusion procedures (TLIF, LLIF, and ALIF) and apply strategies to optimize arthrodesis

1. Online self-directed learning: 4 weeks before the in-person event, participants will have access to short self-study modules, including surgical videos.
2. In-person event is carried out through a combination of discussions and practical exercises. This combination allows participants to listen, discuss, and apply the concepts to solve real cases. 4 participants will be working together on one workstation, with human anatomical specimens.

## AO Spine Curriculum

This course follows the AO Spine MISS Curriculum, developed jointly by expert spine surgeons and the AO Education Institute. With a focus on building core competencies in minimally invasive spine surgery, it ensures participants gain both a thorough understanding of the techniques and the skills required for clinical application.

## Chairpersons



**Nitin Shetty**  
London  
United Kingdom



**Marcin Czyz**  
Birmingham  
United Kingdom

## Educational advisor



**Sashin Ahuja**  
Cardiff  
United Kingdom

## Regional faculty

Please check out the course event page

## National faculty

Please check out the course event page

# Pre-course online materials

4 weeks before the in-person event, participants will have access to short self-study modules, including reading material and videos.

## Saturday

May 09, 2026

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08:00–08:30    Registration: Day 1  
**The Gonville Hotel**  
2 Gonville Place  
Cambridge CB1 1LY  
United Kingdom

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|             |                          |                     |
|-------------|--------------------------|---------------------|
| 08:30–08:45 | Welcome and introduction | Chairpersons        |
|             | AO Spine presentation    | Educational advisor |

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### Module 1 – CORE

Moderator: F Surname

#### Case discussions

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08:45–09:30    **Case-based discussion: Degenerative spondylolisthesis**

- Case presentation (5 min)
- Small group discussion (10 min)
- Plenary discussion (10 min)
- Case resolution (5 min)
- Discussion (5 min)
- Short evidence-based lecture (10 min)

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09:30–10:15    **Case-based discussion: Degenerative scoliosis**

- Case presentation (5 min)
- Small group discussion (10 min)
- Plenary discussion (10 min)
- Case resolution (5 min)
- Discussion (5 min)
- Short evidence-based lecture (10 min)

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10:15–10:45    Coffee Break

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10:45–11:30

**Case-based discussion: Trauma**

- Case presentation (5 min)
- Small group discussion (10 min)
- Plenary discussion (10 min)
- Case resolution (5 min)
- Discussion (5 min)
- Short evidence-based lecture (10 min)

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11:30–12:15

**Case-based discussion: Tumor/infection**

- Case presentation (5 min)
- Small group discussion (10 min)
- Plenary discussion (10 min)
- Case resolution (5 min)
- Discussion (5 min)
- Short evidence-based lecture (10 min)

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12:15–12:30

**Module debrief and take-home messages**

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12:30–13:30

**Lunch**

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**Module 2 - CORE**

**Moderator: F Surname**

**Surgical techniques**

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13:30–14:10

Surgical technique: TLIF - CORE

Video and step-by-step technique discussion

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14:10–14:50

Surgical technique: LLIF - CORE

Video and step-by-step technique discussion

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14:50–15:05

Coffee Break

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|-------------|---------------------------------------------|
| 15:05–15:45 | Surgical technique: ALIF - CORE             |
|             | Video and step-by-step technique discussion |

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|-------------|--------------------------------------------|
| 15:45–16:15 | Principles of Endoscopic Spinal Techniques |
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| 16:15–16:45 | Principles and Techniques of Endoscopic Spinal |
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| 16:45–17:00 | Module debriefing, take-away messages |
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| 18:30 | Course Dinner |
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# Sunday

May 10, 2026

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07:30–08:00    Registration: Day 2  
**Cambridge Surgical Training Centre**  
The Quorum, Barnwell Road  
Cambridge CB5 8RE United Kingdom

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## Module 3 - CORE

Moderator: F Surname

### Practical exercises at the wet lab

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08:00–09:30    **Rotation 1**

MIS TLIF / Navigation

LLIF

ALIF

Endoscopic Decompression/ Fusion – Uniportal / Biportal

Robotic Assisted Techniques

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09:30–09:45    Coffee Break

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09:45–11:15    **Rotation 2**

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11:15–12:45    **Rotation 3**

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12:45–13:30    Lunch

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13:30–15:00    **Rotation 4**

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15:00–16:30    **Rotation 5**

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16:30–16:45    Coffee Break

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16:45–18:00    **Rotation 6**

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18:00–18:05    Module debriefing and take-home messages

Module moderator

Preliminary