

Robotic-Assisted Spine Surgery: Hands-On Specimen Course

Programme Details & Hands-On Workshop Schedule (2026/27)

MORNING SESSION: LECTURES (09:00 – 13:00)

TIME	TOPIC & CONTENT OUTLINE	SPEAKER / CHAIR
08:30 – 09:00	Registration	Secretariat
09:00 – 09:10	Opening Address & Workshop Objectives Welcome message; Strategic goals for advanced tech incorporation, patient safety, and clinical outcomes.	Dr. KK Wong
09:10 – 09:30	Robotic Spine Systems – Overview of Technology Available platforms in spine surgery, technical background brief, and workflow from preoperative planning to execution.	Dr. Chris Tang
09:30 – 09:50	Use of the Spine Robot in Degenerative Spine – How I Do It Robotic applications in degenerative cases, cervical pedicle screw insertion, and key technical pearls.	Prof. Luthfi Gatam
09:50 – 10:00	Q&A Session	All Panelists
10:00 – 10:20	<i>Coffee Break</i>	—
10:20 – 10:40	From Beginner to Mastery – Overcoming the Learning Curve Surgical training pathways, accuracy, complication rates, and case selection (degenerative, deformity, tumour, revision).	Prof. Jacob Oh
10:40 – 11:00	Spine Robot Application in Single Position Surgery Combining robotics with MIS approaches (posterior/lateral TLIF, OLIF) and integrating percutaneous with endoscopic techniques.	Prof. Jason Cheung
11:00 – 11:20	Advanced Applications of Spine Robots in Scoliosis Deformity Robotic-guided pedicle screw placement in complex spinal deformity and revision scoliosis cases.	Dr. Paul Koljonen
11:20 – 11:40	Q&A Session	All Panelists
11:45 – 12:45	Lunch & System Exhibition Interactive demonstrations & hands-on exploration of robotic systems and instruments.	—
12:45 – 13:00	Transition to Hands-On Lab, Briefing & Group Allocation	—

AFTERNOON SESSION: HANDS-ON LAB & SIMULATION (13:00 – 17:00)**Structure Note:** 5 Concurrent Practical Stations (45 minutes per rotation).**Station 1: Computer Station – Virtual Planning & Construct Design Practice****Facilitators:** Industry Team & Dr. Chris Tang | **Equipment:** Robotic planning stations with pre-loaded software

- Upload and segment spine CT/MRI datasets.
- Plan pedicle screw trajectories, rod bending, and implant positioning.
- Simulate deformity correction and assess planning accuracy.

Station 2: Cadaver A – Thoracolumbar & Pelvic Screw Application (Mazor)**Facilitators:** Prof. Jacob Oh & Dr. Paul Koljonen | **Equipment:** Full robotic setup with cadaveric spine (prone position), C-arm

- Execute robotic-assisted multi-level lumbopelvic fusion procedure with guided screw placement.
- Focus on workflow integration and real-time troubleshooting.

Station 3: Cadaver B – Cervical & Upper Thoracic Screw Application (Globus)**Facilitators:** Dr. Luthfi Gatam & Prof. Jason Cheung | **Equipment:** Full robotic setup with cadaveric spine (prone position), C-arm

- Utilize navigated robotic arm for anatomic guidance and trajectory confirmation.
- Perform multilevel screw insertion in cervical and upper thoracic spine regions.

Station 4: Sawbone & Synthetic Model – Portable Miniature Spine Robot (HiCren)**Facilitators:** Dr. Samuel Fang | **Equipment:** Robotic system with lumbar and cervical sawbone models

- Perform registration, planning verification, and robotic-guided drilling.
- Place screws in degenerative and trauma simulation models with emphasis on efficiency and handling.

Station 5: Cadaver C – Fully Autonomous Spine Robot Application (Orthobot)**Facilitators:** Prof. Kenny Kwan & Dr. Andy Yee | **Equipment:** Autonomously driven spine robot integrated with navigation system

- Deploy autonomously navigated robotic arm for precise K-wire placement.
- Perform multilevel percutaneous screw insertion.

PLENARY WRAP-UP & CLOSING

17:00 – 17:15	Hands-On Session Wrap-Up	All Facilitators
17:15 – 17:30	Closing Remarks & Certificate Presentation Summary of key learnings, distribution of participation certificates, final Q&A, and feedback collection.	Course Directors
17:30	<i>Workshop Adjourned</i>	—