

Robotic-Assisted Spine Surgery: Hands-On Specimen Course

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

Target Audience: Orthopaedic & Neurosurgical Specialists | Venue: Surgical Skills Centre

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. Raymond 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	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
09:50 – 10:00	Q&A Session	All Panelists
10:00 – 10:20	Coffee Break	-
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	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
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: 6 Concurrent Practical Stations (40 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 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: Prof. 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 (Orthbot) 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.
Station 6: Sawbone & Synthetic Model - Active Robotics with Ergonomic Control (J&J Velys) Facilitators: Dr. Paul Koljonen Equipment: Robotic system with lumbar and thoracic sawbone models • Perform registration, planning verification, and robotic-guided drilling. • Place screws in degenerative and trauma simulation models with emphasis on active tracking features.

PLENARY WRAP-UP & CLOSING

TIME	TOPIC & CONTENT OUTLINE	SPEAKER / CHAIR
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	Workshop Adjourned	-