**Program for the anatomical specimen lab of the STM Fundamentals course**

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| TIME | AGENDA ITEM |  |
| 5 mins | Introduction to the lab module  Learning objectives:   1. Select and apply appropriate instruments 2. Apply correct surgical exposure and closure techniques to minimize complications 3. Apply techniques of dead space management 4. Describe and apply methods for correct alignment of tissue 5. Select and perform appropriate closure/coverage using the reconstructive principles | Chairs |
| **Exercise 1 (optional based on participant level)** | **Sutures, instruments, and Surgical exposure** | Spinal block |
| 15 min | * Introduction to key sutures, needles & instruments * Demonstration of correct incision technique * Demonstration of hemostasis * Correct use of blades, retractors & instrumentation * Skin incision techniques |  |
| 15 mins | Discussion at the tables |  |
|  | Creation of a dead space (faculty) |  |
| **Exercise 2** | **Dead space management & closure under tension** | Spinal block |
| 80 min | Correct techniques for:   * Closure of the muscle * Correction of undermined tissue * Closure of the skin * Which suture type are you going to use |  |
| 20 mins | Break |  |
| 10 mins | Discussion at the tables (issues collection)  (Questions need to be defined) |  |
| **Exercise 3** | **Closure under laxity** | Abdominal wall |
| 80 min | * Common suturing techniques * Closure of a beveled cut * Closure of an asymmetric wound * Correction of standing cones deformity (dog ears) * Scar tissue correction |  |
| **Exercise 4 (optional)** | **Skin grafting**   * Demonstration on how to harvest a skin graft * Tips and tricks, increased take, etc. * Donor site management * Discuss graft fixation strategies * Create a full-thickness skin defect and insert skin graft (sutures or staples) |  |

**Planning worksheet for overall requirements**

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| **Item** | **Description** | **Notes** |
| **Faculty** |  |  |
| * Chairs | 2 |  |
| * Table instructors | One per table |  |
| **Participants** |  |  |
| * Number | TBD |  |
| * Groups | - |  |
| **Location** |  |  |
| * Room size | Existing |  |
| * Room setup | Existing |  |
| * Number of stations | TBD (including one demo station) |  |
| * Other |  |  |
| **Anatomical specimens** |  |  |
| * Parts | Porcine spinal blocks and bellies (abdominal walls) |  |
| * Number | Spinal blocks  Abdominal walls |  |
| * Setup | 1 per station (only 1 for the demo station) |  |
| **Materials/instruments** |  |  |
| Instruments | Needles (cutting & tapered), needle drivers, forceps (single & multi toothed), retractors, including self-retaining retractors |  |
| **Consumables** |  |  |
|  | Permanent and resorbable sutures, Stratafix sutures, skin glues |  |
|  | Various blade sizes (#10, #15) |  |
| **IT** |  |  |
| * Laptops | 1, with capability to stream videos into the different rooms |  |
| * TV screens | One for each room |  |
| * Other |  |  |
| **Other** |  |  |
| * Whiteboards |  |  |
| * Flipcharts | Yes, one per room |  |
| * Other |  |  |
| **Video** | Video camera at the demo table with streaming facility to the TV screens (for demonstration purposes) |  |
| **Photography** | Yes, photographer from either the AO or the J&J Institute to document the event |  |
| **Assessment & evaluation** | Evaluation forms |  |

**Planning worksheet for individual module/session**

**Module/session title:**

**Exercise 1: Sutures, needles, and instruments**

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| **Item** | **Description** | **Timing** | **Notes** |
| Overall setup |  |  |  |
| Model | Porcine spinal block, fixed to a base to create tension |  |  |
| Introduction | Introduction to key sutures, needles & instruments | 5 mins |  |
| Demonstration | Correct incision technique, indications when to use cutting versus tapered needles | 5 mins |  |
|  | Video demonstration of hemostasis | 3 mins |  |
| Preparation by faculty | N/A |  |  |
| Steps | N/A |  |  |
| Evaluation | N/A |  |  |

**Exercise 2: Surgical exposure**

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| **Item** | **Description** | **Timing** | **Notes** |
| Overall setup | Staggered start | 5 mins for each participant |  |
| Model | Porcine spinal block |  |  |
| Introduction | None (done in exercise 1) |  |  |
| Demonstration | None (done in exercise 1) |  |  |
| Preparation by faculty | Mark the incision line |  |  |
| Dissection steps | 1. Skin incision: dissection along the pre-marked line 2. Incision of fascia down to spinous processes |  |  |
| Feedback | Feedback on dissection by the table instructors |  |  |
| Evaluation (points for faculty: rating of the surgical exposure procedure) | 1. Perpendicular to the skin 2. Full thickness (go through the skin in one cut, or when multiple cuts, then in the same plane as the previous cut) 3. Perpendicular to the dermis 4. One cut through fat (or when multiple cuts, then in the same plane as the previous cut), superficial fascia, down to deep fascia 5. Manual retraction 6. Retraction using instruments (enough retraction to see but no more) 7. Use of sutures to retract tissue |  |  |
| Preparation by faculty | Creation of a dead space:   * rongeur off spinous processes * lift the paraspinal muscles * lift on one side a flap at the subcutaneous layer over the muscle fascia | 15 mins |  |

**Exercise 3: Dead space management & closure under tension**

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| **Item** | **Description** | **Timing** | **Notes** |
| Overall setup |  |  |  |
| Model | Porcine spinal block |  |  |
| Introduction |  | 2 mins |  |
| Demonstration | Demo video on dead space management | 3 mins |  |
| **Part 1** |  |  |  |
| Steps | 1. Closure of the muscle (barb suture) | 5 mins |  |
| Feedback | Feedback to closure | 5 mins |  |
| Preparation by faculty | Create skin & fat defect and undermine one side | 5 mins |  |
| **Part 2** |  |  |  |
| Steps | 1. 3-point closure versus barb suture (fat) 2. Closure of undermined tissue with advancement 3. Deep dermal closure | 15 mins |  |
| Feedback | Feedback to closure | 5 mins |  |
| **Part 3** |  | 45 mins |  |
| Demonstration | Video on skin closure options |  |  |
| Steps | Skin closure (Prineo vs intracuticular vs external interrupted and running suturing techniques) |  |  |
| Feedback | Feedback to closure |  |  |
| Evaluation | Evaluation of closure techniques by the faculty |  |  |

**Exercise 4: Closure under laxity**

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| **Item** | **Description** | **Timing** | **Notes** |
| Overall setup |  |  |  |
| Model | Porcine belly (abdominal wall) |  |  |
| Preparation by faculty | 1. Create a beveled S-shaped cut 2. Create an asymmetric opening 3. Create a standing cone deformity 4. Create a simulated scar tissue | 10 mins |  |
| **Part 1** |  |  |  |
| Introduction |  | 5 mins |  |
| Demonstration | Demonstration of closure techniques – the traditional way (half-half) versus alternate technique to prevent dog-ear formation | 5 mins |  |
| Steps | 1. Deep dermal closure 2. Intracuticular skin closure | 15 mins |  |
| Feedback/Rating points | Feedback to closure  Correct use of instruments/hands for closing (using the right pick-ups (single versus multi-tooth forceps), pinching) | 5 mins |  |
| Preparation by faculty |  |  |  |
| **Part 2** |  |  |  |
| Demonstration | Techniques for correction of standing cones | 5 mins |  |
| Steps | 1. Perform standing cone correction (cut & close, Burow's triangle) | 10 mins |  |
| Feedback | Feedback to closure | 5 mins |  |
| **Part 3** |  |  |  |
| Demonstration | Demonstration of scar tissue correction (Z-plasty; single & multiple) | 5 mins |  |
| Steps | 1. Scar tissue correction (cut & close) | 15 mins |  |
| Feedback | Feedback to closure | 5 mins |  |
| Evaluation | Evaluation of closure techniques by the faculty | 5 mins |  |