Activity	Student Robotics Competition	**Location**	Southampton University S		**Likelihood**	**Likelihood rating**	**Severity**	**Severity rat**	**Risk rating**	**Category**	**Tolerability**	**Comments**
			Start	**End**	Very unlikely	1	First Aid injury/illness	1	1-2	Very low	Acceptable	No further action is necessary other than to ensure that the controls are maintained.
Assessors	Will Barber	**Event dates**	11/04/26	12/04/26	Unlikely	2	Minor injury/illness	2	3-4	Low	Acceptable	No additional controls are required unless they can be implemented at very low cost (in terms of time, money and effort).
Date assessed	17/12/2025				Likely	3	'3 day' injury/illness	3	5-7	Medium	Tolerable	Consideration should be given as to whether the risks can be lowered, where applicable, to a tolerable level, and preferably acceptable level, but the costs of additional risk reduction measures should be taken into account. The risk reduction measures should be implemented within a defined time period.
Version	1				Fairly likely	4	Major injury/illness	4	8-14	High	Tolerable	Substantial efforts should be made to reduce the risk. Risk reduction measures should be implemented urgently within a defined time period and it might be necessary to consider suspending or restricting the activity, or to apply interim risk control measures, until this has been completed. Considerable resources might have to be allocated to additional control measures.
					Very likely	5	Fatality/disabling injury	5	15+	Very high	Unacceptabl	Substantial improvements in risk control are necessary, so that risk is reduced to a tolerable or acceptable level.

Who is at risk	**Description**
Competitors	A competitor (16-19 year old) who is involved in the risk activity
Team Supervisors	A named Team Supervisor (responsible adult) for the team who is involved in the risk activity
Volunteers	Someone working on behalf of Student Robotics who is involved in the risk activity
Third Parties	Someone not involved in the risk activity. This may include competitors, team supervisors, volunteers, or event visitors.

Hazard	**Description**	**Who is at risk**	**Likelihood**	**Severity**	**Risk Factor**	**Controls**	**Likelihood**	**Severity**	**Risk factor**	**Responsible person**
Injury while using manual or power tools	Inappropriate use of tools resulting in tools slipping and/or breaking and thereby injuring the user or those nearby.	Competitors Team Supervisors Third Parties	4	3	12	Tools should only be used when appropriate. Team Supervisors to supervise all tool use by teams. All use by Volunteers should be by a competent adult. Loose hair or clothing to be tucked in or removed whilst operating tools. Safety Glasses to be worn in the power tools area Teams reminded in advance that they should provide their own safety gear along with tools. Student Robotics will not provide any tools to Competitors. Basic safety gear will be provided. Tools to be visually inspected before every use. Work pieces should be properly secured/supported. First aid provision available to manage any incidents.	2	3	6	Team Supervisors SR Health and Safety Coordinator
Soldering	Inappropriate use of soldering irons could lead to burns	Competitors Team Supervisors Third Parties	5	4	20	All soldering irons to be treated as if they are hot even if they are unplugged (since they may still be cooling down). Saftey glasses are to be worn when soldering	1	4	4	SR Health and Safety Coordinator
Interaction with robots: electric shock	Robots operate from battery power, and outputs can be enabled/disabled autonomously use of higher voltage batteries or circuitry could pose a risk	Competitiors Team Supervisors Volunteers	1	3	3	All voltages within robots to be within SELV limits (120VDC, 50VAC maximum). Additional power sources used on the robot must be approved beforehand and must provide an easy and safe cutoff mechanism, obvious and accessible from the top of the robot. Robots subject to a safety inspection at the beginning of the competition and randomly throughout the event. Teams will be required to rectify any potentially dangerous areas of their robots, and may be prevented from competing until they do so. The battery must connect only into the Student Robotics Power Board which is capable of cutting the power off from the rest of the robot.	1	1	1	Team Supervisors SR Health and Safety Coordinator
Interactions with robots: burns	Parts of the robot heat up due to electrical energy dissipation or friction. This might result in a minor burn on the skin.	Competitors Team Supervisors Volunteers	2	2	4	All Student Robotics circuit boards are housed in a protective casing. Team Supervisors to supervise work on robots. All work on robots to be conducted in team pits, or other designated area (e.g. power tools area). Robots must be powered down and placed within the team pits if left unsupervised. Volunteers should inspect a robot to identify any potential risks before handling. Power outputs from the Student Robotics kit are limited.	1	2	2	Team Supervisors SR Health and Safety Coordinator
Injury to Competitors, SR Volunteers, and Visitors due to unsafe robots	Robots may behave in unsafe ways, either inherently or due to performing something typically safe but in inappropriate circumstances. Examples include a sharp edge being exposed, or a projectile being launched towards observers.	Competitors Team Supervisors Volunteers Third parties	3	2	6	Team Supervisors to supervise work on robots. Robots subject to a safety inspection before use. Robots re-inspected randomly throughout the event, entry into the arena or access to batteries can be revoked at any time. Robots must be powered down and placed within the team pits if left unsupervised. Robots to be be immobilised if being handled. Anyone identifying a potential safety issue to report it to the safety inspector. Arena access controlled by SR Volunteers, maximum of 4 teams at a time, and modification of robots inside the arena is not permitted (this also applies to the test arena). A readily available and obvious power off button connected to the Student Robotics Power Board must be accessible from the top of the robot. The battery must connect only into the Student Robotics Power Board which is capable of cutting the power off from the rest of the robot. Volunteers should inspect a robot to identify any potential risks before handling. During matches, Competitors are not allowed in the arena whilst the robots are in motion.	1	2	2	SR Health and Safety Coordinator
Electric shock from mains sources	Unsuitable use of mains equipment, or the use of damaged mains equipment or cabling, results in a high voltage high current electric shock	Competitors Team Supervisors Volunteers Third parties	2	4	8	Mains equipment and cabling to be appropriately rated and fused. All powered equipment to be used when appropriate and in the manner they are designed to be used. Mains cabling to be inspected at intervals for damage. All Student Robotics mains equipment used to be visually inspected before use. Damaged equipment to be retired from use.	1	4	4	Team Supervisors SR Health and Safety Coordinator

Injury from improper manual handling	Improper handling technique, or moving of equipment with insufficient people results in the individual handling causing personal injury. Handling of equipment unsafe for manual handling resulting in cuts or other physical injury. Nearby third parties getting injured by moving equipment, or crushed by dropped equipment.	Competitors Team Supervisors Volunteers Third parties	3	3	9	Team Supervisors to supervise their teams. Volunteers involved in manual handling trained and briefed. Manual handling only performed within an individual's ability. Handling to be broken down into managable chunks where possible and appropriate. An appropriate number of individuals to be involved in any manual handling. Trolleys and elevators used where possible When moving robots elevators to be preferred or extreme care taken on stairs Heavy equipment not to be moved in busy areas unless unavoidable. Robots not to exceed 16kg.	2	3	6	Team Supervisors SR Health and Safety Coordinator
Slips, trips, and falls	Obstructions or liquids on the floor resulting in a person falling, potentially whilst carrying equipment. This can potentially result in bruises or broken bones.	Competitors Team Supervisors Volunteers	4	4	16	Extension leads secured down and inspected regularly. Cabling and equipment kept off the floor in regular and high use walkways. Team Supervisors to enforce teams keeping their pit areas tidy. Carrying of robots or large or heavy objects on the stairs to be kept to a minimum. Running is not permitted. Any identified slip or trip hazards to be signed and removed as soon as possible. Obsticles on walkways (i.e. arena entrances) to be clearly marked.	2	3	6	Team Supervisors SR Health and Safety Coordinator
LiPo Batteries	The lithium polymer (LiPo) batteries used within the robots have the potential if mistreated to ignite and become a self-sustaining fire. Smoke released from this combustion is potentially harmful if inhaled.	Competitors Team Supervisors Volunteers Third parties	1	5	5	All batteries to be charged in fire-proof bags and by trained volunteers. Damaged equipment (e.g. exposed wires) to be retired from use. Robots to provide isolated enclosure for installed batteries to protect against crushing or puncturing damage. Competitors and Team Supervisors have been informed about safe use of the batteries throughout the competition year. SR Volunteers and Team Supervisors to identify batteries showing signs of damage or swelling and deliver to Helpdesk for safe disposal. Batteries not to be given to teams until teams are safety checked Boxes containg batteries clearly labelled	1	3	3	Team Supervisors SR Health and Safety Coordinator
Injury moving robots into/out of the arena	Robots have to be lifted into and out of the arena, involving lifting a potentially large and heavy robot over the arena wall and over and around arena components which may present trip hazards. Time limitations require robots to be powered up at time of arena entry, potentially allowing unexpected robot movement.	Competitors Volunteers	3	3	9	Individuals carrying robots reminded not to rush, support provided, or the carrying prevented if insufficient time is available. Student Robotics volunteers to intervene if handling is deemed unsafe.	1	3	3	SR Health and Safety Coordinator
Injury due to objects falling from height	A person on the ground is injured by a person or object falling from a height	Competitors Team Supervisors Volunteers Third parties	3	5	15	Areas in which work at height is being performed to be restricted. Physical barriers to be used where objects are at risk of being pushed over the edge of barriers or ledges. Objects not to be placed on ledges at height. Leaning over or holding objects over ledges at heights not permitted. Objects are not to be passed up or down from heights where an alternative route is available.	1	5	5	SR Health and Safety Coordinator Volunteers
Hearing damage from excessive noise levels	Exposure to sounds at too great a volume for an extended period causing damage to the listeners hearing	Third parties	2	3	6	Avoid use of excessive volumes, this is managed by the venue technicians.	1	3	3	SR Health and Safety Coordinator
Reaction to theatrical effects utilised, such as lighting effects	Theatrical effects causing shock, or epileptic (or similar) fits.	Third parties	2	3	6	Signage to be clearly visible in areas where theatrical effects are used. Flashing lights and smoke to be kept to a minimum. Clear announcement of theatrical effects to be made immediately before testing in areas where theatrical effects are used.	1	3	3	SR Health and Safety Coordinator
Accidents due to fatigue from working long hours	Fatigue induce poor judgement resulting in unknown task-specific accident causing injury to the individual undertaking the task or those nearby.	Competitors Team Supervisors Volunteers Third Parties	3	3	9	Team Supervisors to supervise their teams. Volunteers suspected of excessive tiredness to be sent home to rest. Volunteers encouraged to take breaks. Opportunity and space for volunteer breaks available. Working extended hours to be discouraged.	1	3	3	Team Supervisors SR Health and Safety Coordinator
Safeguarding Incident	Competitors are under the age of 18 and volunteers or adults attached to teams may fall into the category of vulnerable adults	Competitors Vulnerable Adults	2	4	8	Safeguarding Lead to appoint a Safeguarding Officer who is responsible for handling incidents at the event. All Volunteers to have read and understood the SR safeguarding policy. Responsible adult to be present and responsible for competitors throughout the event. If a young/vulnerable person arrives without a Team Supervisor, it is ensured that there are at least two Volunteers supervising the student while their responsible adult is located. If the responsble adult isn't going to turn up, the situation situation is to be dealt with on a case by case basis. Refusing entry to a young/vulnerable person could lead them stranded in an unknown location.	1	4	4	Safeguarding Officer Volunteers
Getting Lost	Attendees unfamiliar with the campus may get lost	Competitors Team Supervisors Volunteers Third parties	3	2	6	Clear directions given to attendees to get them to initial venue. Familiarisation of building provided by Volunteers upon entering new buildings pointing out toilets and where majority of people will be. Signage around venues to let attendees know where is off limits and directions to toilets etc.	1	2	2	Organiser Volunteers
Fire	Fire within the venue	Competitors Team Supervisors Volunteers Third parties	3	5	15	Organisers will be familiar with fire alarm and evacuation arrangements for venues. Volunteers to be made aware of arrangements and how to act in an emergency.	1	5	5	SR Health and Safety Coordinator Volunteers