Skill media highlights

Skill number	Skill name	Key times to visit	Unique story	Contact
		When would be the most ideal days and times to have photographers and videographers at your skill? What will they see?	Tell us about the unique stories connected to your skill at WSC2024 such as: Test Project elements Changes in what you are testing Competitor and Expert specific stories Industry trends Partner collaborations	Who should the media, photographers and videographers contact for any questions?
01	Industrial Mechanics	Any time after 09:00 on any of the competition day, Competitors will be participating in 5 different challenges over the 4 days	The "Doctors of Industry" The challenges over the 4 days are right in line with industry trends and will challenge the skill sets of each Competitor. 12 countries in different corners of the globe are participating in this skill with tasks on welding, layout, disassembly, inspection and reassembly of pumps and gearboxes', fluid power with hydraulics and pneumatics, and working with a lathe.	Craig Brazil scm.industrial.mechanics@worldskills.org

| 02 | Information Network Cabling | **C2** 15:30-17:00 **C4** 13:15-14:00 Fiber splicing speed challenge | The importance of data centers, 5G, and other network infrastructures—key areas of focus for this profession—is rapidly increasing due to advancements in AI. The Test Project for WSC2024 incorporates many new elements in response to these developments. | Takuo KIKUCHI scm.information.network.cabling@worldskills.org |
| 03 | Manufacturing Team Challenge | Drawing, parts fabrication, and assembly will be done from **C1 to C3.** **C4** is a dynamic test day. | This skill is a competition in which teams of three build a three-wheeled electric bicycle. Each member has a different role and all perform different tasks. Every team will create a different design of the E-Bike. The key skill in this project is how efficiently and quickly the three members can work together to complete the task. | Tsutomu Imagawa scm.manufacturing.team.challenge@worldskills.org |

| 04 | Mechatronics | Great activity and the most visually time:

C1 13:35 - 14:35
Finish of Module A 30% of a production line consisting of a known station

C2 14:00 – 15:15
Finish of Module B 60% of a production line consisting of the systems of C1 and a new (totally unknown) station

C3 14:00 - 15:15
Finish of Module C complete production line consisting of the stations of C2 and new (totally unknown) parts | Mechatronics is a modern profession in the digital age, bridging IT with various technologies in the field of automation. The most fascinating aspects of the competition include assembling unknown production lines and programming/optimizing these systems. The competitors work in a team of 2 persons; therefore they need high social competences to fulfil the tasks. Most of them can communicate without words.

A remarkable story from the WSC2015: One of the German Competitors in São Paulo fell ill and had to be hospitalized after day three. The second Competitor requested permission to continue alone and was granted approval. Despite the challenge, he achieved an impressive 22nd rank and earned the Medal of Excellence for both him and his team partner. | Michael Linn
scm.mechatronics@worldskills.org |

05	Mechanical Engineering CAD	**C1, C2 and C3** after **14:30** for 3D modelling, animations and rendering and 3D Printing **C4 at 09:00 to 10:00** 3D Scanning	Interesting highlights are: 3D prints of parts 3D Scanning Several former Competitors became Experts Generative Design	Dario Pinto scm.mechanical.engineering.cad@worldskills.org
06	CNC Turning	**C4** **08:30 -09:00** All Competitors study the Team-challenge project **10:30-11:30** Assembly and award ceremony of Team Challenge	A variety of sample parts from the industry will be showcased to give the audience a clear understanding of what these machines and technicians accomplish daily. Test Project Elements: Real sample parts from the industry. The interest in the competition among women has been rising in recent years. In 2019, a woman won the silver medal. This year, there are four Competitors from African countries and many Experts who are former Competitors.	Gernoth Dolinar scm.cnc.turning@worldskills.org

| 07 | CNC Milling | **C-2, 14:00 – 16:00**

Photographers will be able to take photos of Competitors trying out the machine. Furthermore, this day will be for set up. Competitors will also be programming in CAD/CAM software on the computer | The industry is becoming increasingly demanding, with products requiring more sophisticated designs and unique aesthetics. The automotive industry demands complex geometric shapes, like those found in a Ferrari or a Formula 1 race car. To manufacture these components, you need advanced machines, equipment, and highly skilled personnel. The CNC Milling area is essential for transforming designs into reality, bringing ideas from paper to differentiated, tangible products. A CNC Milling professional is highly skilled, with the unique ability to turn any project into reality—whether it's a car, an aircraft, an injection moulding, or even a spacecraft. | Daniel de Aviz.
scm.cnc.milling@worldskills.org |
| 08 | Mobile Applications Development | The four-day competition is exciting from start to finish. The Skills Competition Manager recommends that photographers and videographers visit on the morning of **C1**. During this session, Competitors will be using physical smartphones to develop apps, adding an extra layer of interest and visual appeal to the event | At WSC2024, physical smartphones were introduced, giving Competitors hands-on experience with the hardware they're developing for. This approach provides a more realistic and practical assessment of their performance, helping them understand how their applications interact with various device features and specifications. | Baptiste Gedalge (Workshop Manager)
wm.mobile.applications.development@worldskillslyon2024.com |

09	IT Software Solutions for Business	**C4** – PM Competitors will have a speed programming challenge. They need to complete the tasks in limited of time. The result will be updated in real time.	A bakery (Belle Croissant)'s growth necessitates a comprehensive IT Software Solution, aligned with the evolving standards for **WSC 2024's IT Software Solutions for Business**. The project aims to improve efficiency. Competitors in this trade are being tested not only on technical coding skills but also on their understanding of business needs, customer experience, and operational efficiency.	Chief Expert WONG, Hang-chit
10	Welding	After 13:00 on **C3** Commencement of hydrostatic pressure testing	Module 1 – welding test coupons Module 2 – Pressure Vessel Module 3 & 4 – Aluminium and stainless-steel sheet projects	Paul Condran scm.welding@worldskills.org
12	Wall and Floor Tiling	**C1 – C4**	This year there is a new water-recycling component.	David MCcay scm.wall.and.floor.tiling@worldskills.org
13	Autobody Repair	During all competition days, you will see them working on different task.	Big change for this year is that there are equal tools and consumables for each Competitor and that will enable the Experts to check the skill level of Competitors not the performance of best tools. This time the skill has some Experts who are Competitors.	Dhavalkumar Dharmendra Rajput scm.autobody.repair@worldskills.org

14	Aircraft Maintenance	The job consists of 5 modules that run continuously: - Helicopter inspection - Composite panel repair - Manufacturing of a bent and riveted aluminum part - Troubleshooting and electrical harness replacement - Inspection/dismantling of a helicopter engine	This is the first time that the tasks are entirely revealed to the Competitors before. This year is unique because all the tasks were created by companies in the industry: Airbus Helicopters, Bombardier, Dassault Aviation, and Safran Helicopter Engines. Safran has even provided us with access to their documentation so that all Competitors can train in advance. Additionally, they supplied us with the support materials and consumables. This allows us to have technical tasks that perfectly align with industry standards.	Media to be referred to one of the Lead Experts
15	Plumbing and Heating	C3 at14:30, C4 at 14:14	On **C3** at 14:30, Competitors will have completed the bathroom and heat pump installation providing Hot and Cold Water and Low temperature central heating. Contributing to world Net Zero targets.	Paul Dodds scm.plumbing.and.heating@worldskills.org
16	Electronics	**C2** 15h00 – 16h00	They will see a project with great interaction with the public, involving programming elements. We have the company VCOM as a sponsor. The company provided an integrated solution of workbenches and equipment.	Joao Olegario de Souza scm.electronics@worldskills.org

| 17 | Web Technologies | **C4** 09:00—12:00

A group of 4-5 Competitors to work on creative projects together.

C4 13:30—15:00

Presentation time for the result of team project. | The test project C4 morning is mainly about collaboration and communication. It demonstrates how modern web development teams work.

The billion-worth tech companies were built in the same way, with 4-5 people working together, coding days and nights. | Thomas Seng Hin Mak.
scm.web.technologies@worldskills.org |

| 18 | Electrical Installations | We have 1 project that will be developed over the 4 competition days each Competitor will construct wire and commission the project task in the cubicle

C1 Competitors will install wireways and equipment into the cubicle

C2 complete installation of wireways and equipment and start drawing in cables and conductors

C3 finalise all cable and conductors' installation and connect to relevant equipment. C3 will include a surprise task change to be completed in cubical by end of Day 3

automation and motor control | The test project includes

Planning, installation, wiring testing, programming and commissioning of electrical installations | Harald Haugen
harald@instell.no |

19	Industrial Control	**C1** between 13:00 to 16:00 **C2** between 09:00 to 15:00 **C3** between 13:00 to 16:00	C1, C2, C3 are for the main test project You can take pictures / video to monitor the progress of construction. To design a soda machine. It is the first time that installations are printed on the white panels for audience to understand. Using the latest equipment to date. First time to ever have 100% secret test project to design the machine.	Thomas Hans scm.industrial.control@worldskills.org
20	Bricklaying	The ideal days are **C3** and **C4** mainly the final hour as the projects are near completion and very visual.	There will be many experienced Experts who are former Competitors, ready to share their stories and journeys. The Test Project design has traditionally aimed to incorporate industry trends while also reflecting traditional skills and the host country's specific trends. In Bricklaying, the bricks are provided by Wienerberger, and all levels are supplied by Stabila.	Rene Letoile, Chief Expert James Cronin scm.bricklaying@worldskills.org
21	Plastering and Drywall Systems	**C1** 15:00 **C4** 15:00	The last day is to finish with freestyle and is the most visual part.	David Kehoe scm.plastering.and.drywall.systems@worldskills.org
22	Painting and Decorating	**C2** 09:00 for speed competition	The competition covers all elements of Painting & Decorating including, wallpapering, colour mixing, free decorative technique, brush skills, setting out and HVLP (high volume low pressure) spraying.	Mike Swan – Chief expert Peter Walters – SCM scm.painting.and.decorating@worldskills.org Ronie Santos AE – media promotor

23	Autonomous Mobile Robotics	**C1 - C4**	Most things visible throughout the competition. Approach workshop and speak to Skills Competition Manage.	Johan Benade, SCM scm.autonomous.mobile.robotics@worldskills.org
24	Cabinetmaking	The most ideal day is the last day. They can see the last minutes of assembly of the complete test project. Competition finish at **C4** 12:15. The last hour provides the best images	The test project is a wine rack featuring a laser-etched crest that evokes the heritage of France. Modern machines like CNCs and lasers have been incorporated into this traditional occupation, aligning with the current demands of the global industry.	Christian Notley, Chief Expert. cnotley@worldskillsuk.org
25	Joinery	**C1 – C4** The first main component of the project will be completed on **C3** at 11:00	This is the first competition where the Competitors will be making a 100% external designed project. Joinery skill involve making a staircase, windows and doors for homes. The joiner can also install these onsite. Hardware is also a strong part of the industry and this project will include some.	Dion Iori scm.joinery@worldskills.org
26	Carpentry	**C2** 16:00 **C3** 16:00 **C4** 13:00	Modern technology is being employed in this year's Competition. From building structure and building cladding to finishing.	Pat Philips scm.carpentry@worldskills.org

27	Jewellery	**C1** is good to capture the concentration, nervousness and drive of the very first day's work. As our the Test Project is External, the Competitors will not see it until the morning of C1. Time is **08:30 to 09:30**	Test project is designed with mandatory components that must be completed each day. There is a creative element on C3 that allows each competitor to apply their own creative mark to the overall test project. This round we will be testing how well competitors manage the gold supplied to make the test project and how efficient they are in containing metal loss. This is a sustainability initiative.	Camilla Victor camilla@ildadesign.com
		C3 has Competitors working on their creative elements. **12:00, 13:30 or 15:00.**	The Test Project has been externally designed by a past external assessor and associate professor at Parsons School of design.	
		C4 final day, around 13:05 when they finish. The Jewellery is typically laid out on a table so that all the Competitors can view the pieces. This is a great opportunity to capture some great images	This year's test project is designed to be worn - strange comment to make of a piece of jewellery- but historically the Test Projects have been more about technique over wearability.	

28	Floristry	From **C1 14:00,** you can see the first two or three Test Projects.	All of the Test Projects are secret but related to Lyon. Our Independent Test Project Designer did research around famous people or places in Lyon.	Attila Boros scm.floristry@worldskills.org
			Four former Competitors have become Experts for this Competition.	
			New country's competing like Croatia for the first time and Australia for the first time again after 6 years.	
29	Hairdressing	**C2 at 14.00-15.45** Men's taper cut and beard for live model	The Test Project reflects key aspects of the hairdressing industry, including salon styles, catwalk trends, gala looks, and fashion-forward designs. The Test Project was independently designed by Katri Pokkinen, a former WorldSkills Competitor in 2001. The Test Project and Marking Scheme were validated by Jaana Hellsten, a WorldSkills Competitor in 2007 who has since built a global career.	Katri Pokkinen scm.hairdressing@worldskills.org
		C3 at 9.00-10.30 Ladies Catwalk and Session styling with mystery box with live model -> **Catwalk about 11.15**	Hairdressing boasts numerous experts who are former Competitors, showcasing the continuity and the remarkable career paths that can be forged after the Competition.	
		C3 at 13.15-15.15 Ladies Long Hair and session styling Met Gala with live models -> **Catwalk about 16.00**		

30	Beauty Therapy	**C1 – C4, from 09:30 – 13:00**	Our Competitors will demonstrate skills and techniques found on Spa and salon Menus from across the World using only French Brands.	Menna Kleine
		Our skill has 6 Modules incorporating skills that will normally be found in a typical Spa or Beauty Salon environment.		scm.beauty.therapy@worldskills.org
				As well as our Skill Chief Expert
		Competitors have been arranged in 4 Groups. Each competitor will complete all the Modules over the 4 days.	Manual Lymphatic Drainage in cooperated into a Swedish Massage treatment. Lymphatic Drainage techniques for Beauty Therapy has never been demonstrated in our skill and is a new innovation in Beauty and Skincare Therapy at WorldSkills.	Vaishali Shah
		Day 1 -3	Lash lifting is a new Skill and is one of the latest Trends in our industry. This technique is also new to the WorldSkills Competition.	
		Modules 1-5 will be performed by the Competitors.	At the Competition, there is an Australian Mother Expert and Daughter Competitor.	
		Day 4 -Module 6 will include a Ballerina Make-up and Nail Art application. Models will be dressed in Ballerina Attire.		
		Once judging is complete the competitors / models and experts will parade around the		

		Workshop floor as a finale		

31	Fashion Technology	The end of the draping module on **C1 at 11:30** is quite spectacular. Submission of Module #4 (Skirt) on C3 at 16:30 is very interesting	Test Project Elements: **C3** Submission of Module #4 (Skirt) at 16:30. Competitors will present their "Couture" skirt on a dress form. Using either a basic skirt block or starting from scratch. They must incorporate mandatory taffeta and lace fabrics, along with elements drawn from a ballot.	Victoria Chan scm.fashion.technology@worldskills.org
32	Pâtisserie and Confectionery	**C1, C3 Sugar work** Between 16h00 – 18h00 **C2, C4 Chocolate work** Master piece made on these days.	Celebrating popular children's puppet show called Giniol. Outline Multiculturism pastry industry bring the world together. Creating a display supporting children and happiness of children around the world. 21 countries participating. Usually male dominated but now only 2 men and 19 women	Herve Boutin herveboutin@yahoo.com.au
33	Automobile Technology	**C1**, 10.30-11.00 **C3**, 12.00-13.00	Partners have been extremely supportive as part of this competition.	Grant Petch, SCM scm.automobile.technology@worldskills.org

| 34 | Cooking | **C1-C4**

12:00 to 13:30;

15:00 to 16:30 | This is a live Bistro Restaurant showcasing cooperation and integration with Restaurant Service and Cooking

There will be lots of action and busy-ness. 12.15 to 13:00.

Then a skills speed module with lots of short fast energy – crazy things chefs have to do as skills in industry.

A must see! | Shaun Smith, SCM
scm.cooking@worldskills.org

WhatsApp: +27 82 414 9114 |

| 35 | Restaurant Service | **C1 – C3** **Cocktail Making** 11:00 to 11:25 **Barista** 10:00 to 10:30 Classic coffee service or 13.20 to 13.45 Speciality coffee service. **Casual dining** live service from 12:30 to 13:30. **Fruit carving** 15:00 to 15:30 **Fine Dining** (from 13.30) is always good for photo opportunities especially **flambe dessert** at approx. 14:30 to 15:00 **Banqueting** service of opening Champagne and service of Canapes from 14:00 to 14:25 | The major change this year is the integration of Restaurant Service and Cookery, with both working side by side in a shared space. A key highlight will be the casual dining restaurant, where, for the first time, Cookery Competitors will prepare and cook the menu dishes that will be served live to guests by the Restaurant Service Competitors. All food prepared during the Cookery competition will be served to customers as part of the Restaurant Service modules, emphasizing a focus on sustainability. Traditionally, skills tests have been conducted without guests, but this year, the competition will reflect real-life scenarios, serving approximately 1,600 people in live service across all modules over the four days. To further reduce environmental impact, all beverages and wines are being sourced locally. This combined competition brings together 90 young competitors from 44 different countries, working side by side for the first time. The focus for WorldSkills Lyon 2024 is to adapt the test projects to mirror real-life service and cookery as seen in the industry. This approach introduces new challenges, making the competition even more exciting. Both the test projects and marking schemes are designed to reflect this real-world emphasis. | Ray Cullen scm.restaurant.service@worldskills.org Shaun Smith scm.cooking@worldskills.org Both Ray and Shaun can give interviews and talk about the combination of Competitors |

| 37 | Landscape Gardening | During the last hour of competition each day, it is possible to see the deliveries of the modules proposed for the day. Although the entire garden will be finished on the last day of competition, There are small deliveries each day.

A typical French garden being built. On the first day, there will be a lot of earthwork, teamwork, and a beautiful vertical structure that can produce beautiful images during its assembly.

On the second day, the teams will put in a great effort to build a stone wall and a very beautiful planting that will form the phrase Lyon 2024.

On the third day, the garden will have a lake with fountains bringing sound and movement to the | A typical French garden, with symmetry and formality. This year, the area of the test project was reduced, which has a positive impact on the sustainability of the event and is certainly part of the profession. The Expert group for this year is made up of several former Competitors, and the Skill Competition Manager is an example of this. He competed in Japan in 2007.

The test project was designed by a landscaper from the south of France, Marc Feraud, and in a small space, he managed to bring together the values of the French garden and certainly motivate professionals to create better spaces for people to use. | Luis Monti
scm.landscape.gardening@worldskills.org |

		proposal. The garden will be finished with a beautiful deck.		
38	Refrigeration and Air Conditioning	Competitors are competing in 2 shifts. **C3 12:00-13:00** or **17:00-18:00**, last hour of: Module A Refrigeration System Installation Module B Electrical Fault Finding **C4 11:00-12:00**, Module C Heat Exchanger Fabrication Module D Refrigeration Fault Finding	Module A is conducted on **C1, 2 & 3** involves building and commissioning a complete refrigeration system which will be left operating for visitors to view on C4. There are 24 Competitors and experts from Europe, Asia, Africa, Australia and the Middle East The refrigeration and air conditioning industry has moved to refrigerant gases which are Ozone safe and have a low or zero global warming potential. The equipment's energy efficiency is continually. increasing due to the use of the lasted technologies. The competition is supported by a number of major sponsors/suppliers including Danfoss, Fluke, Lincoln Electric, Refco, Climalife, Roebuck, Le Froid Pecomark	Simon LOR SAW contact@simonlor-saw.fr

39	IT Network Systems Administration	Any time during the skills competition **C1 – C4.** On **C4,** there will be a troubleshooting task that might encourage some more movement in the workshop	The test project is divided into four modules, one for each day. Module A - The Competitor configures a network based on Linux and other open source software. Module B - The Competitor configures a network based on Microsoft Windows. Module C - This module focuses on the network itself, the fabric that allows the computers to communicate to each other. Module D - Troubleshooting of a preconfigured network. In this module the Competitors receive help desk tickets that aims to simulate real world problems that one might encounter.	Wolfgang Toechterle scm.graphic.design.technology@worldskills.org
40	Graphic Design Technology	**C1** to **C2** 11.15 to 12:00 Oral Presentation. Each Competitor presents in 2 minutes their poster on the topic of graphic design in their own country.	This year, the products will be displayed in a shelf at the workplace. Of course, you only see the results towards the end of the day. It will be interesting to see how the results will be very different, yet the same task.	

41	Health and Social Care	Actual Action will happen during **C1 to C4**, except Lunch slots as the entire team will have lunch together (Competitors and Experts)	The Test Project is designed Externally for the very first time – thus it is a secret. It has been validated by external industry experts. New and industry specific elements have been added to make it as real and close as possible. Partner, VCOM, is being introduced in Test Project as a new element. The skill is evolving. For example, Standards and Assessment Guide has been made and validated by all Experts across the world. Specific stories of experts and Competitors can be collected if requested	Shubhada Sakurikar scm.health.and.social.care@worldskills.org
42	Construction Metal Work	**C1 - C4**		Rafael Jordão, SCM scm.construction.metal.work@worldskills.org
44	Visual Merchandising	**C4** will be the best day for photographers and videographers to record, especially from **10:00 to 12:45** when will be the final installation and display process for the window. **C3** from **13:30 to 15:30** is interesting as well for the production process for props-making and touch-up.	Visual Merchandising is a highly challenging competition in WorldSkills. Competitors and Experts only learn the Test Project's theme, display products, and provided props on the morning of C1, with all tools and materials supplied exclusively by WorldSkills. To successfully complete the Test Project, competitors must demonstrate three distinct talents: **C1**: Functioning as a designer working in a design studio. **C2–C3**: Operating as a production house. **C4:** Acting as a visual merchandiser in a retail shop.	Leo CHAN (SCM) scm.visual.merchandising@worldskills.org Wayne Kheng Hock Oh (CE) wayne_oh@nyp.edu.sg

46	Concrete Construction Work	**C1 & C2** Before 17h00 for the end of the day	See timing breakdown	Thomas Pirgl (CE)
		C2 from 12:00 till 16:30 to see a concrete pump in action		Kin Kee WO (HK)
		C3 afternoon till the end of the day – formwork are removed and we discover the concrete wall		
		C3 before 16:45 end of the day		
		C4 before 11h45 end of the competition		

47	Bakery	Competition finish time at **15:30pm on C2 and C4** with the crowd cheering	Every baker dreams of competing in a baking competition in France, a country renowned in our industry, especially for its iconic baguettes and croissants. This year, the Bakery skill will see participation from 24 countries, the highest at a WorldSkills Competition There are split shifts implemented for sustainability, given the extensive use of expensive machinery. We are thrilled to have Bongard, a major French equipment sponsor, providing our ovens, mixers, provers, and more. Additionally, we're using locally sourced French flour, Foricher for the Competition. Several past WorldSkills Competitors in this skill are now Experts at WSC2024.	Ashley Schmidt scm.bakery@worldskills.org
48	Industry 4.0	**C1 - C4**	Approach workshop and speak to Skills Competition Manage.	Sasa Simovic, SCM scm.industry.4.0@worldskills.org
49	Heavy Vehicle Technology	**C1 to C4 09:30 - 11:30**	A hybrid skill, involving Competitors working with construction equipment and machines, agricultural tractors and machinery, as well as on-road equipment like trucks and buses. This diversity allows Competitors from several apprenticeship backgrounds to participate in the WorldSkills competition. Two women are competing in Skill 49.	Thomas Murphy scm.heavy.vehicle.technology@worldskills.org

| 50 | 3D Digital Game Art | C1 around 1130am

C1 around 330pm

C3 1pm (Ubisoft Ivory Tower visit)

C3 around 330pm

C4 around 330pm | Test project is a collaborative effort co-designed by Independent Test Project Designers from Ubisoft Ivory Tower (Lyon) and Ubisoft Singapore.

Creative Director, Loic Barrier and Vehicle Artist, Jeremy Sachot will be at the workshop on C3 1pm to support the competitors, share their presence in Lyon and highlight their active role in our competition.

Ubisoft, a renowned French AAA video game company, offers a great opportunity to showcase our skill50 by associating with their esteemed name. | scm.3d.digital.game.art@worldskills.org |
| --- | --- | --- | --- | --- |
| 51 | Logistics and Freight Forwarding | Any day | Logistics is the invisible glue that keeps economies and societies functioning.

This year, the skills has added a sustainability section to the Test Project. Due to the impact of Climate Change we need to ensure sustainable supply chains. | Declan Allen

scm.freight.forwarding@worldskills.org |
| 52 | Chemical Laboratory Technology | Ideal days are **C2-C4** anytime from **09:00,** except time for lunch (12:00 – 13:15) | | |

53	Cloud Computing	Late morning on **C1, C2 and C3** The Competitors are working on the computer, and we have a score board on their screen to show their ranking. C1, C2 and C3	Cloud Computing is very supported by AWS, and has been involved with this skill since its inception. This year, a former French Competitor came back to the skill, but as an Expert.	Chit Boon Lee scm.cloud.computing@worldskills.org
54	Cyber Security	**C2 – C4 in the afternoon**, but before 3 as the public scoreboard will be turned off for the last hour of the competition. CTF (Capture the Flag competition, public scoreboard of each team)	The project for Cyber Security is Modular: on the first day, Competitors are assessing the security level and securing typical Enterprise IT infrastructure. On the second day the competitors are doing tasks related to Forensics, and secure coding On day 3 they are doing red tasks (attacking) On day 4 they are doing blue tasks (defending). In order to get a flag, competitors will be required to use advanced techniques to (for example) break into a restricted area or operating system and view a file with the contents of the flag. Cyber Security is constantly in the news – when there is data breach and cost of cybercrimes in 2024 is estimated to be as much as 9.5 trillion USD.	Doug Warden, SCM scm.cyber.security@worldskills.org

55	Water Technology	Software simulation **C1-C4, 09:00-10:00** daily Lab testing of water quality **C3, 13.00-15:00** **C4, 10:00-12:00** Mechanical work of valve and pump maintenance **C1-C2, 13.00-17.00** Automation and process control of water/ wastewater treatment system **C1-C3, 10:00-12.00**	- 3 out of 4 jobs in the world are depending on water – UN Development Report 2016. - It is time to care – it is time to qualify staff in the water sector worldwide! - In 2025, 2 out of 3 people won't have enough water! - Over 80% of the world's wastewater is released to be environment without treatment. - Competition will test water quality testing, water system process understanding and maintenance.	Liu Qishan (SCM) LIU_Qishan@sp.edu.sg Hilmar Tetsch (CE)
56	Hotel Reception	C1-C4	Approach workshop and speak to Skills Competition Manage.	Bruno Lanvin, SCM scm.hotel.reception@worldskills.org

57	Additive Manufacturing	**C1** in the afternoon, there will be 3D-Scanning of objects, **C2** and **C3** before noon there will be preprocessing of 3D-Printers and Printstart.	The Test Project across all submodules is designed to tell a cohesive story centred around a specific component. Four experts who participated in WorldSkills Competition 2022 Special Edition are meeting again, while five experts are participating in Skill 57 for the first time. Additive Manufacturing is one of the major future technologies with significant potential for development.	Jens Bechthold scm.additive.manufacturing@worldskills.org
58	Digital Construction	**C1**; 15:00 – 16:30, Clash detection (comparing 3D models of buildings to identifying issues). **C2**; 15:00 – 16:30, Building Information Modelling (3D virtual modelling of a building design). **C3**; 15:00 – 16:30, Asset Information Modelling (working with the data in a 3D building model). **C4**; 10:00 – 12:00, Visualization (rendering images of a building design using gaming software).	Setting up collaborative cloud working environments for construction projects. Creating 3D virtual models of building designs and producing construction drawings from these. Bringing together the 3D virtual models from different consultants (architect, engineers, etc.) and identifying any coordination issues. Calculating the environmental impact of and cost to build these building designs. Using visual programming to automate workflows and work with data. Using gaming engines and immersive technology to visualize proposed building designs. The Workshop Manager, Pierre Loir was the French Competitor for the skill at WS2022SE	Davitt Lamon. scm.digital.construction@worldskills.org

59	Industrial Design Technology	From C1 to C3, Competitors are working on their tasks, and showcasing their professional skills.	Industrial design is to create good user experience products and enhance the quality of life. The design of the Test Project reflects this direction	James Chen jamesjnchen@gmail.com
60	Optoelectronic Technology	**C2 08:00 – 11:00** or **C2 12:00 – 13:30** Competitors will be working to manufacture colourful RGB LED Strips into beautiful shapes and patterns.	Skill 60 was hosted for the first time at WordSkills Competition 2022 Special Edition. As optoelectronics is an emerging and fast-growing industry, it's good to see it showcased at a global stage in Lyon	Tyler Chen scm.optoelectronic.technology@worldskills.org

62	Renewable Energy	**C1 & C2**	**Test Project elements**	
		solar PV plant installation,	Installation, O&M & designing of solar plant & wind farms	
		Solar Inverter installation	**Industry trends**	
		Wind turbine installation	Renewable Energy is one the fastest growing energy technology across the globe and job opportunities are very high	
		C2	**Partner collaborations**	
		Wind nacelle learning system	FESTO, Siemens & Fluke	
		C3		
		Fault Finding		
		C4		
		Programming software simulation		
63	Robot Systems Integration	**C1/C2/C3**		Nigel Ramsden, SCM
		during assessment – from 16:00 to 19:00		scm.robot.systems.integration@worldskills.org
		C4		
		assessment from 15:00 to 19:00.		For Marketing issues: delphine.charrenenot@fanuc.eu
		On C2 & C3 only		adele.leblanc@fanuc.eu
		Speed/Fault Finding modules from 10:00 to 12:00		Alexandra.Kochetkova@fanuc.eu
				sabina.kielbik@fanuc.eu

E01	Stonemasonry	**C1** for design in computer, **C2** and **C3** for carving stones	Competitors will make a little fountain with a Lion. At the same time, CNC machine will help them to make a part of test project and at the end of competition they will assemble all stones. Before, it was made by hand and pneumatic tools only, now they will create digitals templates and all stones will be premade in CNC at the site at Lyon.	Olivier Dupé. dupe.o.c@orange.fr
E02	Heavy Truck Maintenance	All Competitors are on rotation so you will see the same skills demonstrated each day, by a different Competitor	Try a Skill truck The use of a huge truck hydraulic lift. Commissioning of vehicle with demonstration of virtual reality for future skills. Repurposing of battery and trucks. Has a high intake of female (7) in a male dominated skill.	Nicolas Limbert, SCMn nicolas.limbert@renault-trucks.com

E03	Rail Vehicle Technology	**C1 – C2 09:45 - 11:00**	Technologies such simulation, virtual reality (VR), augmented reality (AR), and mixed reality (MR) are increasingly used in rail training and competition equipment. They have considerably transformed rail technical and vocational education and training (TVET)	Zhiming Liu scm.rail.vehicle.technology@worldskills.org
		Competitors are highly focused and work together to perform measurement, parts replacement, etc. The difference between the working height of the two Competitors create great visual effect. You can see comprehensive train functional tests (compressor, lights, doors, pantographs, air conditioner, etc.) in highly integrated simulation equipment	Thanks to this integration, it is easier to obtain and analyze trainee performance in real time and greatly reduces the workload of assessors. More people in the rail TVET community will benefit from these new technologies.	