





UC Makerspace Benchmark General Information

Prepared by Bryce Cronin. Version 1 (19/08/2020). (License: CC BY-NC-SA 4.0)

| | ANU Makerspace | UNSW MCIC Makerspace | UniMelb Maker Spaces | UC Makerspace |
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| Notes | ANU has a network of 3 dedicated makerspaces. The main space being 'ANU Makerspace @ Physics'. This document will consider all of these as one. | UNSW has several disconnected "makerspaces". This document will only be considering the UNSW 'MCIC Makerspace'. | Due to the large arts presence at UniMelb, there are a lot of varying makerspaces open to students. This document will be considering the 'Fab Lab', 'NExT Lab', 'Print Room', and 'Photo Studio' spaces. | <u>These are recommendations only.</u> |
| URL | https://makerspace.anu.edu.au/page/about_us.html | https://www.making.unsw.edu.au/mcic/ | https://msd.unimelb.edu.au/maker-spaces/home | - |
| Location | ANU Acton (Main) Campus, Canberra | UNSW Kensington (Main) Campus, Sydney | UniMelb Parkville (Main) Campus, Melbourne | UC Bruce (Main) Campus, Canberra |
| Facilities | <ul style="list-style-type: none"> Traditional makerspace | <ul style="list-style-type: none"> Traditional makerspace Collaboration space Event space Commercial services | <ul style="list-style-type: none"> Traditional makerspace Commercial services | <ul style="list-style-type: none"> Traditional makerspace Collaboration Space Event space |
| Size | 3 separate small rooms, the largest space is approx. 30m ² . | Massive space containing separate rooms for the makerspace, collaboration space, and event spaces. | Network of medium sized spaces (~50m ²) with a focus on providing commercial services. | Single medium sized space (~50m ²). |

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| Layout modularity | Not modular. | | | A modular layout will enable this space to suit the needs of varying events and workshops without the need for dedicated rooms. e.g. using desks with wheels, room dividers, etc. |
| Management/ staff model | Dedicated staff on site at all times, supported by volunteer mentors. | | | |
| Opening times | Mon-Fri 8am-6pm. Extended hours on Monday. | Mon-Fri 10am-8pm. Early close on Friday. | Mon-Fri 10am-4:3pm. | Mon-Fri 9am-6pm. Reduced hours outside of semester 1 and 2. |
| Membership model | 100% free for all students and staff to access. In general, no community access. | | Open to all students and staff from the Faculty of Architecture Building and Planning. | 100% free for all students and staff to access. Community access for events. |
| Funding model | Each member gets a small amount of 3D printing filament to start off. After this, all materials must be provided by the member. Contains a "store" where common materials are provided at cost to students. | Some materials supplied to members. Members can pay per material used, or bring their own. Commercial services for industry are offered. | Supported by commercial services for students and the community. Including 3D printing services and research activities in the space. Students pay per materials used. | Each member gets a small amount of 3D printing filament to start off. After this, all materials must be provided by the member. Contains a "store" where common materials are provided at cost to students. |
| Training model | Induction training (including safety) required to access the space and basic equipment. Additional training modules and training are required to use advanced equipment. (UNSW have a very intense/professional training program) | | | |
| Mentor model | Mentors are dedicated makerspace members who have access to the space and assist with training. | Mentors are dedicated members who have completed significant online training. Assist members within the space. | No mentorship model. | Mentors are dedicated makerspace members who have access to the space and assist with training. |

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| Safety | <ul style="list-style-type: none"> • Safety is the top-priority. • All equipment is labelled with a safety-rating - corresponding training needs to be completed before members are allowed to operate this equipment. • Safety training (included in induction training) is required to be completed before members are allowed access to the space (not required for events which will be supervised at all times and include basic safety). • Formal first-aid training required by all staff members. | | | |
| Community engagement | Occasional collaboration with ANU student societies. | Event space is extensively used for community events (e.g. hackathons) and student society events. Dedicated staff to support industry research activities. | Little community engagement. Dedicated staff to support industry research activities. Community members can pay for designs to be manufactured via an online portal. | Engagement with UC clubs and societies will be a priority. Allowing the space to be used by community organisations (e.g. Shirty Science) or for primary/ secondary school engagement is also a priority. |
| Storage | No storage for members. | Limited storage for members. | | Limited storage for members and interested clubs and societies. |
| Integration with classes | No integration. | Strong integration with art and design courses. | | Relevant classes using the space on a non-regular and supervised basis may prove beneficial for engagement. |

UC Makerspace Benchmark Tools/Equipment

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| | ANU | UNSW | UniMelb | UOW | UC MAKERSPACE |
|---|-----|------|---------|-----|--|
| 3D Printers | ✓ | ✓ | ✓ | ✓ | Essential for a makerspace. 5+ printers recommended for the initial space. <ul style="list-style-type: none"> • https://imaginables.com.au/ have been known to sponsor makerspaces in the past. • https://3dprintersuperstore.com.au/ usually offer educational packages for ~\$20000, however it seems like they are not currently being offered. |
| Resin 3D Printers | ✓ | ✓ | ✓ | ✗ | These are higher quality 3D printers that use UV to cure liquid resin into hardened plastic. 1 basic resin printer recommended for the initial space or as a future addition. \$1000-\$2000. <ul style="list-style-type: none"> • ~\$1000-\$1500 at 3DPrintersOnline.com.au |
| Laser Cutter | ✓ | ✓ | ✓ | ✓ | Small laser cutter recommended for the initial space. <ul style="list-style-type: none"> • \$5115 at 3DPrintingSolutions.com.au |
| Hand Tools | ✓ | ✓ | ✓ | ✓ | Basic hand tools are essential for a makerspace. Including screwdrivers, hammers, pliers, drills, socket sets, hex keys, chisels, etc. ~\$1000. <ul style="list-style-type: none"> • Basic tool sets from Ikea, and Bunnings. |
| Soldering/ Electronics Station | ✓ | ✓ | ✗ | ✓ | 2+ soldering stations recommended for the initial space. ~\$250/each. <ul style="list-style-type: none"> • Available from Jaycar. |
| 2D Printers (Including large format) | ✗ | ✗ | ✓ | ✗ | Highly recommended for initial space. |
| Power Tools | ✓ | ✓ | ✗ | ✗ | Not recommended, possible future addition. |

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| CNC Router | ✓ | ✓ | ✓ | ✗ | Small CNC router recommended as a future addition if budget allows. Cheap CNC routers are not worth the trouble. <ul style="list-style-type: none"> • A Snapmaker 3-in-1 A350 device would provide a nice middle ground for ~\$2500. |
| Sewing Machine | ✓ | ✗ | ✗ | ✓ | 1+ sewing machines recommended for initial space. |
| PCs | ✗ | ✓ | ✗ | ✓ | A minimum of one PC will be required to operate the 3D printers. Additional (3+) high-end computers also recommended for CAD and design work. |
| VR Lab | ✓ | ✗ | ✓ | ✓ | Highly recommended as a future addition. ~\$5000 for entry level equipment. |
| Stationary, binding equipment, etc | ✗ | ✗ | ✓ | ✓ | Highly recommended for initial space. |
| Photography equipment | ✗ | ✗ | ✓ | ✓ | Basic photography equipment recommended. E.g. Pop-up studio tents . |
| Storage facilities | ✗ | ✓ | ✓ | ✗ | Storage cabinets highly recommended for internal use by the makerspace and for members/societies. <ul style="list-style-type: none"> • Ikea Lixhult locker system. • Ikea Bror shelving system. |
| Additional equipment | Additional equipment can easily be added to the space if a need is identified. Each makerspace tends to cater for a niche that evolves over time. | | | | |