

**MASTER IN
ROBOTICS &
ADVANCED
CONSTRUCTION**



**IAAC
ARCHITECTURE
SCHOLARSHIP
CHALLENGE**



[Img 1](#): IAAC Barcelona - The institute main hall

The Institute

The [Institute for Advanced Architecture of Catalonia \(IAAC\)](#) is a centre for research, education, production and outreach, with the mission of envisioning the future habitat of our society and building it in the present.

IAAC follows the **digital revolution** at all scales (from bits to geography, from micro-controllers to cities, from materials to the territory) to expand the boundaries of architecture and design and meet the challenges faced by humanity. IAAC is an **experimental and experiential Institute** where students learn by doing, through a test methodology that promotes real solutions. IAAC is a multidisciplinary centre with 17 years of activity; **inspired by the values of Barcelona**, the capital of architecture and design, where urbanism was invented and where a local high quality and innovation-oriented research is **connected to an international network of excellence in technology, architecture and society** fields.



Img 2: IAAC - Kuka - IAAC Lab

The Programme

The **Master in Robotics & Advanced Construction (MRAC)** trains a new generation of interdisciplinary professionals who are capable of facing our growing need for a more sustainable & optimised construction eco-system.

The Master is focused on the emerging design and market opportunities arising from **novel robotic and advanced manufacturing systems** challenging the traditional processes in the Construction Sector. Specifically, it investigates how advances in robotics and **digital fabrication** tools change the way we build and develop processes and **design tools** for such new production methods.

MRAC offers an international and **multidisciplinary environment where engineers, designers, architects**, academics and industry partners have the opportunity to **rethink the construction industry**.



Ima 3: 3D printed construction concept built at IAAC

The Brief

Design, Architecture and Robots: Call for innovation

Premise - Propose a computational or digitally fabricated solution to envision **how robotic manufacturing systems can challenge traditional architectural processes and bring innovation for the design and construction industry.** Applicants can choose the preferred location and scale in the submission.

Brief - **Choose a purpose you are building for**, it can be something for migrant crisis around the world - or - affordable rural housing - or - **any real world opportunity that technology enabled construction can solve.** Devise how robotic led fabrication can help to **improve design processes through machines** and bring access to good architecture by modern methods and efficiency. The submission can be from your graduation project or conceived afresh for this competition.



Ima 4: IAAC MRAC 19-20

Prospective Participants

IAAC Architecture Scholarship challenge (IASC) is open to all students and young professionals in the world. In order to participate, candidates interested in the IASC are required to meet the following minimum requirements:

1. Hold a **first-level academic diploma** or Bachelor degree, **or about to graduate within 2020/21**.
2. Have a full proficient level in **English**.
3. Have **a complete professional profile on UNI** with relevant all educational/professional details.
4. Submit your project and your portfolio (PDF) linked to the proposed project.
5. Complete your candidature filling the IASC application from: <https://iaac.net/scholarships-xyz-mrac/>

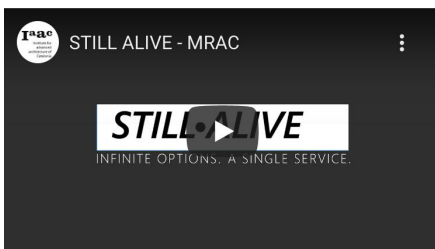
Resources



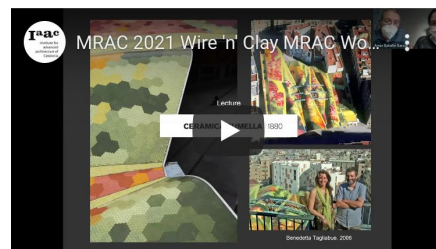
[link](#)



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How to manipulate and integrate robotics and advanced manufacturing process?

How to create and generate a parametric design for mass customisation in the industry 4.0?

How to integrate computer vision and sensor feedback for fabrication processes?

Explore the potential of computational design and optimisation, artificial intelligence and machine learning, **understand** the potential of autonomous robot systems, **develop** new applications of augmented reality and connected mobile devices; and **propose** digital design and building technologies for both pre-fabrication and on-site construction.



Purpose

What is the aim of your brief?



Design

How does design apply to the purpose chosen?



Technology

How fabrication technologies and functionality are taken into account?



Materials

Which materials/architectural methods are chosen and why?

Judging Parameters

The following parameters can be a point of introspection before participants conceive the project design. Participants can assume user groups and broad context of their design based on their purpose. The project is intended to be a test bed of your curiosity and interest in the advanced construction domain.

Step 1:



Profile

Complete your professional profile on UNI and update your educational/experience details

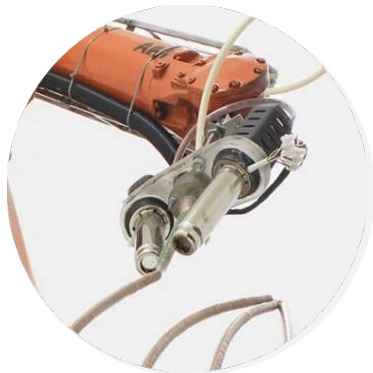
Step 2:



Project

Develop a concept project based on the Robotics x Architecture theme with a purpose.

Step 3:



Portfolio

Upload your portfolio as a publication and link it to the project and submit.

Steps

Following 3 staged process is mandatory for participating in IASC challenge. **After your project submission, candidates will be contacted within a 2-3 week time to be informed on their project award or rejection.**



Minibuilders

[link](#)



Fusta Robotica

[link](#)



On Site Robotics

[link](#)



3d Printed Bridge

[link](#)

Reference Projects

Guidelines

You have to deliver a project outcome, based on the given submission outlines.

- Recommended number of pages:

3 (Three) of size [**2800px x 3500px**] in portrait digital format (**JPEG only**). **No maximum image limit.** ([Page Template](#)).

Each page should be less than **15MB**. (Do not submit PNG format).

Deadlines

Discover the competition schedule and deadlines on the competitions page or on this link - [Schedule](#).

After the project submission, the candidates will be contacted within a 2-3 week time to be informed on their project award or rejection.

Please note that you may be invited for an interview with the MRAC program directors to evaluate your profile.

Resources

This competition contains additional resources that are unlocked on your profile dashboard as soon as you register.

The additional resources folder of this competition contains: Submission Format files in PSD | AI | InDD and [MRAC Programme Booklet](#).

Rules

+ Plagiarism of any idea / form / design / image will be disqualified with a notice.

+ This is a solo/individual competition.

+ You can only register one project/submission

+ Ensure that the final sheets submitted **do not include your name or any other mark of identification**. Your submission is linked to your personal xyz user account which stands as your identification.

+ Mention sheet number on corner of every sheet.

+ Submit JPEG images only. (PNG will not function)

+ This is an **ideas challenge only**. There is no built commission/realization associated with the problem.

+ All the sheets or images will be viewed on a digital device. **e.g.** Laptop screen or projector. Uploaded sheets or images will not be physically printed for evaluation. The submission hence should be prepared for digital viewing only.



Scholarships

The following scholarships to the prestigious IAAC's Master in Robotics and Advanced Construction programme will be awarded in this competition. The award is discretionary, meaning the scholarship is related to the work submitted and profile of the candidate. The offered scholarships are:



50%

**Tuition Funded MRAC
program Scholarships**



30%

**Tuition Funded MRAC
program Scholarships**



20%

**Tuition Funded MRAC
program Scholarships**

The IAAC Academic Committee reserves the right to assign or adjust any scholarships depending on the quality of the projects submitted by the candidates.



Based in Barcelona, the he Institute for Advanced Architecture of Catalonia (IAAC) offers multidisciplinary programmes that explore international urban and territorial phenomena, with an emphasis on the opportunities that arise from the emergent territories, and the cultural, economic and social values that architecture can contribute to today's society.

IAAC sets out to take Research and Development to architecture and urbanism, and create multidisciplinary knowledge networks.

The Institute has made a name for itself as a centre of international reference, welcoming students and investigators from over 60 different countries among which Australia, the USA, India, Brazil, Russia, Ethiopia, all European countries and many others.

Discover more on the MRAC program: <https://cutt.ly/Vl6EZUe>

[MRAC Booklet](#)

[Facebook](#) [Instagram](#) [Twitter](#)

About



UNI is a global network of architects and designers who are solving some of the most challenging problems around the globe. UNI brings together world's largest pool of design challenges that are curated by the finest architecture academicians and professionals globally. With over 200,000+ registered members, UNI brings academia and professional spheres of architecture together through a unique knowledge sharing web platform.

Since 2017, UNI has hosted more than 200+ architecture competitions for various idea level to realization level briefs. In past, UNI has helped 50+ organizations, universities, and government bodies to use our platform to generate architecture and design solutions through competitions.

UNI aims to create a seamless information exchange within architecture industry with this one-of-a-kind community. It foresees a future where architects and consumers are getting real-world design deployed over the internet through sophisticated software and applications from anywhere in the world.

Queries: **support@uni.xyz**

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Next generation of
architecture is almost here.