Fall 2020 SoA Incoming Graduate Student Enrollment Onboarding Information

The Carnegie Mellon University, School of Architecture (SoA) is excited to welcome you to our graduate program! Please read through the information provided in this document to assist you as you plan to begin your program this fall.

## Fall 2020 University Graduate Education Deadlines

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>Immediately</td>
<td>Set your <a href="https://soa.cmu.edu">Andrew ID password</a> and Andrew email account.</td>
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<tr>
<td>June 30, 2020</td>
<td>Submit health history and immunization forms to <a href="http://www.soahub.cmu.edu">Health Services</a> via HealthConnect.</td>
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<tr>
<td>Beginning July 1</td>
<td>Register for <a href="https://soa.cmu.edu">University-wide Graduate Student Fall Orientation</a></td>
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<tr>
<td>July</td>
<td>Enrollment begins for <a href="http://www.soahub.cmu.edu">student health, dental, and vision insurance</a> (Student Health Plan) for incoming students. Eligible participants have a specific enrollment period once each academic year (called &quot;open enrollment&quot;) for their medical enrollment or waiver decisions.</td>
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| August                | [International Graduate Student Orientation](https://soa.cmu.edu) programs begin. There are several sessions to choose from.  
  ● All F and J students are required to attend one session.  
  ● Registration is required. |
| August 10             | Deadline to register for [University-wide Graduate Student Fall Orientation](https://soa.cmu.edu) |
| August 15             | Deadline for enrollment for [student health, dental, and vision insurance](http://www.soahub.cmu.edu) (Student Health Insurance Plan) for incoming PhD students. |
| August 15             | [Deadline](http://www.soahub.cmu.edu) for Fall tuition payment. You can view/pay your bill via the [Billing & Payments](http://www.soahub.cmu.edu) page at The HUB. Carnegie Mellon offers [payment options](http://www.soahub.cmu.edu) that allow students and families to pay amounts due to the university in manageable monthly installments and provides the convenience of enrolling and making payments online through Tuition Management Systems (TMS). |
| August 17-20          | [University-wide Graduate Student Fall Orientation](https://soa.cmu.edu) for ALL new graduate students. |
| August 31             | First day of Fall semester classes. |
Updated: 2 June 2020

September

Deadline for enrollment for student health, dental, and vision insurance (Student Health Insurance Plan) for incoming undergraduate and master’s students.

Immediately, if parking is desired

Submit your application for a campus parking permit. The online open enrollment period is now closed. Anyone who has not applied yet and still wishes to be allocated an individual permit to park on campus during the coming year, including those seeking a disability or universal permit, must come to the Parking & Transportation Office located on the lower level of the Cohon University Center to fill out a paper application.

Overall Helpful Links about Graduate Education at CMU:
The university has created several helpful webpages for incoming graduate students:

- Graduate Education - for other programs, services, financial matters, policies, etc. http://www.cmu.edu/graduate/
- Incoming Graduate Student Information – preparation for campus arrival, moving to Pittsburgh, and orientation http://www.cmu.edu/graduate/incoming-students/index.html
- Center for Student Diversity and Inclusion - https://www.cmu.edu/student-diversity/
- Counseling and Psychological Services (CaPS) - https://www.cmu.edu/counseling/
- Disability Resources - https://www.cmu.edu/disability-resources/
- Graduate Student Association (GSA) - https://www.cmu.edu/stugov/gsa/
- Office of International Education (OIE) - https://www.cmu.edu/oie/foreign-students/index.html

Obtaining Andrew ID and Accessing your Andrew Account:
Your Andrew ID * gives you access to your Andrew account to give you access to the university’s computing services such as Student Information Online (SIO), the computing clusters, and your Carnegie Mellon Google Mail email account. You will also need your Andrew ID and password to submit your health history and immunization forms, enroll in student health insurance, register for classes, and apply for temporary or permanent university housing. You should have already received an email from Computing Services with the subject line “Receive your Andrew userID”. The initial email will be sent to the personal email used in your application. The email will contain a link for retrieving your Andrew userID and instructions for continuing the First Pass process to set your initial password.

To receive your Andrew userID and set your initial password:
1. Follow the link in the email you receive from Computing Services (it-help@cmu.edu).
2. Note: The link is unique and can only be used once. Be sure to visit the web page before the expiration date stated in the email.
3. Follow the on screen First Pass instructions to receive your Andrew userID. Write down your Andrew userID; you will only see it once and you will need it to set your password.
4. Once you have received your Andrew userID, a confirmation page will be displayed.
5. You will receive another email with instructions on how to set a permanent password.
Your Carnegie Mellon email account with Google Mail is your source for official and important Carnegie Mellon communications. Please check it frequently before you arrive on campus and during your academic career (for international students, I-20 information is sent to your Andrew email!)

To get started with email and other computing at Carnegie Mellon, please visit the Computing Services website to explore the computing resources available to you as a Carnegie Mellon student.

Note: Incoming graduate student records were created in early May. Around that time you should have received an email from Computing Services requesting you to set up your Andrew userID. If you haven't received your Andrew ID, and the link that you received in that email has expired, you must contact Computing Services at it-help@cmu.edu.

*Andrew ID:
All incoming students are issued an “Andrew ID.” Your Andrew ID acts as your Carnegie Mellon User ID, and allows you access to the University's various websites. Your Andrew ID is also used as your CMU email address (example: AndrewID@andrew.cmu.edu).

**The HUB (Enrollment Services):**
The HUB has most of the information that you will need to manage your time as a student here at CMU. If you have not already, please take some time to look through their website. As a student, it is here that you can access your Student Information Online (SIO) to manage your personal information, register for classes, check your grades and other academic information, and review your finances. You will also find many "helpful links" as you scroll through their homepage and answers to “frequently asked questions” at the bottom of the page.

**Student Information Online:**
(SIO) is your personal student account containing information on Finances, Grades, Courses, and much more.
Computing & Technology:
Students are provided access to many computer labs on campus with necessary software for coursework, but students are not guaranteed computer access. SoA facilities include a woodshop and digital fabrication lab. Students are required to have their own computer/laptop and should reference the 2020 Incoming Student Computing Guidelines in ADDENDUM B at the end of this document.

Please visit the Computing Services website to explore the computing resources available to you as a Carnegie Mellon student.

Digital Skills Workshop (DSW):
As indicated in your admission letter, all incoming MAAD, M.Arch, MSBPD, MSSD, and MUD students are required to complete the Digital Skills Workshops (DSW) summer course to establish a baseline of digital design skills expected at SoA.

The first part of DSW will be an online course (June 22 - August 7) and the dates of the second part will be announced later this summer. Please reference ADDENDUM A at the end of this document for important information about registering for DSW and course specifics. You will also reference the 2020 Incoming Student Computing Guidelines in ADDENDUM B for computer and software requirements.

All incoming MSAECM and MSCD students have the option to complete the Digital Skills Workshops (DSW) summer course and should talk to their advisor. Please speak with your advisor to determine if the DSW will be helpful for your individual course of study.

Students must first have an active Andrew ID and use it to register for DSW via the following link: https://forms.gle/v5sUJNCsWn7B7Tj9K8

After registration, all information regarding the DSW course will be available via the course Canvas site: https://canvas.cmu.edu/courses/17167
Fall 2020 Orientation:
Carnegie Mellon University will host the University Graduate Student Orientation the week of August 17-20, 2020 and is required for all new entering graduate students. The program and registration will be available July 2020 at https://www.cmu.edu/graduate/programs-services/orientation/index.html. Questions can be addressed to grad-ed@cmu.edu.

The School of Architecture's Graduate Programs Orientation is scheduled the week of August 17, 2020. This orientation gives you an opportunity to meet other architecture graduate students, receive an introduction and overview of your program, and learn more about university computing, administrative policies, and procedures. It has proven essential for all new graduate students. More information will be communicated to you via email and will be available online in the coming months.

IMPORTANT: All new foreign students and scholars are required to complete International Student Orientation and a Mandatory Immigration Check-In with OIE upon arriving at CMU. All dates for fall 2020 may be impacted based on plans that are still under development for the fall semester. We will communicate updates accordingly. The Mandatory Immigration Check-In is tentatively scheduled for August 23, 2020. International Student Orientation dates have not yet been announced. See https://www.cmu.edu/oie for additional information about arrival and international orientation. Before attending orientation, students must complete the “Newly Admitted Student Arrival E-Form” in their MyOIE Portal.

As your participation in these orientations is required, please plan your arrival accordingly. If you have questions, please contact Darlene Covington Davis at dc1e@andrew.cmu.edu.

***Some SoA graduate programs may host events/workshops (like DSW) specific to the needs of that program during CMU’s orientation weeks. If your graduate program will have additional events/workshops, you will be notified well in advance to your arrival in Pittsburgh.

Foreign Students and Scholars:
All foreign students and scholars will work with the Office of International Education (OIE) to facilitate the process of obtaining a student visa, document procedures, and employment options. You will want to familiarize yourself with their website <www.cmu.edu/oie>. There are a few important sections of their website that you will need to visit:

- “Coming to Carnegie Mellon” explains the steps you will need to take now that you have accepted your admission offer <https://www.cmu.edu/oie/foreign-students/coming-to-cmu.html>
- “Settling in Guide” helps you to prepare for your arrival at CMU and the U.S. <https://www.cmu.edu/oie/settling-in-guide/index.html>
- “Coronavirus/COVID-19 Frequently Asked Questions” for a series of FAQ COVID-19 pages dedicated to specific topics that are updated by OIE on a continual basis <https://www.cmu.edu/oie/faq/covidfaqs.html>

Immigration regulations and policies are subject to change and may change rapidly without much advance notice. Students should routinely review OIE’s FAQs, the university’s Coronavirus Information page, as well as read all university emails sent to their Andrew account.

Immunization & Health Insurance Requirements:
All incoming students are required to meet certain immunizations standards as well as carry personal health insurance. University Health Services has created several helpful websites for incoming graduate students:
Questions about graduate student health, immunizations, and health insurance requirements can be directed to:

-- General information: health@andrew.cmu.edu or 412-268-2157 (press option 2)
-- Immunization information: health@andrew.cmu.edu or 412-268-2157 (press option 4)
-- Insurance information: health@andrew.cmu.edu or 412-268-2157 (press option 3)

Official Transcripts:

As part of the terms of enrollment in the SoA graduate programs, incoming students are required to provide an official copy of a transcript for each degree earned. Transcripts for study abroad, certificate programs, or individually taken classes are not necessary unless the transcript includes a program-required prerequisite course or the program requires the transcript for an evaluation of course exemption.

The transcripts that were uploaded as part of your application are not considered official as they were not sent to us directly from the institution.

Incoming students are required to submit Official Transcripts for all partial and completed degree programs no later than July 31, 2020. For completed degree programs, you must ensure that the date of conferral is listed on your transcript. We cannot register you for Fall semester courses until we receive copies of all Official Transcripts.

TRANSCRIPT FROM INSTITUTIONS WITHIN THE UNITED STATES:

Transcripts must be FINAL, meaning that the degree earned and the date of degree conferral (graduation date) must be printed on the transcript. If you are still enrolled in your degree program, you may have to wait until after you have graduated to have the official transcript sent.

The transcript must be sent directly from your institution to the School of Architecture. We cannot accept transcripts issued to you and any copies you have in your possession (even if they are signed and sealed) cannot be used. Your official transcript can be sent to the School of Architecture by any of the following delivery methods:

1. **Electronic Delivery**
   - If possible, we prefer electronic delivery of transcripts.
   - The transcripts should be sent directly from the registrar of the institution (if your institution offers this service) to soagrad@andrew.cmu.edu.
2. **U.S. Postal Service**
   - Those transcripts that are mailed to the SoA must be enclosed in a sealed, unopened envelope, signed across the seal by the registrar's office, and mailed to the following address:

   Graduate Admission & Enrollment  
   Carnegie Mellon University  
   School of Architecture  
   201 College of Fine Arts  
   Pittsburgh, PA 15213  
   USA

**TRANSCRIPT FROM INSTITUTIONS OUTSIDE THE UNITED STATES:**

If you have completed degrees from institutions located outside of the United States (except Canada), you are required to provide all official transcripts translated into English.

Transcripts must be FINAL, meaning that the degree earned and the date of degree conferral (graduation date) must be printed on the transcript. If your official transcript does not show a degree conferral date, then you must send the to our graduate admission office a certified, true copy of the diploma or certificate of degree completion showing the date the degree was conferred.

Transcripts must be certified and come directly from the issuing authority. Please contact the Director of Recruitment of Enrollment, Alexis McCune Secosky <amccune@andrew.cmu.edu>, to let us know when your transcript was sent, what courier service was utilized, and any tracking information that would be helpful for us to be able to know when to expect your transcript documents.

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**Financial Assistance:**
For information on non-SoA financial assistance, visit:
http://www.cmu.edu/graduate/financial-assistance/index.html. This information includes:

- https://www.cmu.edu/sfs/financial-aid/index.html for student financial aid including application process and timeline
- https://www.cmu.edu/sfs/tuition/graduate/index.html for graduate student tuition and fees by college and program

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**Housing:**
Information about finding a place to live, and living in Pittsburgh can be found at:
https://www.cmu.edu/graduate/incoming-students/after-you-arrive/housing.html. Additionally, the Graduate Student Assembly (GSA) at CMU has developed a Graduate Student Housing Handbook for the Pittsburgh area.
Information about housing: https://www.cmu.edu/stugov/gsa/Resources-for-Graduate-Students/Housing-Resources.html.

Many of our graduate students live off-campus in nearby neighborhoods, including Squirrel Hill, Shadyside, Oakland, Greenfield, East Liberty, Bloomfield, and Lawrenceville.
Thank you for your attention to these matters. If you have any program-specific and course registration questions, please contact your program’s track chair listed below. We will be in touch over the summer with important university/school announcements.

Sincerely,

Carnegie Mellon University, School of Architecture
Graduate Program Faculty & Staff

<table>
<thead>
<tr>
<th>Jeremy Ficca, MAAD Track Chair</th>
<th><a href="mailto:jficca@andrew.cmu.edu">jficca@andrew.cmu.edu</a></th>
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<tr>
<td>Kai Gutschow, M.Arch Track Chair</td>
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<td>Erica Cochran Hameen &amp; Joshua Lee, MSAECM Track Co-Chairs</td>
<td><a href="mailto:ericac@andrew.cmu.edu">ericac@andrew.cmu.edu</a>; <a href="mailto:jdlee2@andrew.cmu.edu">jdlee2@andrew.cmu.edu</a></td>
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<td>Daniel Cardoso Llach, MSCD Track Chair</td>
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<td>Dana Cupkova, MSSD Track Chair</td>
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<td>Stefan Gruber, MUD Track Chair</td>
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<tr>
<td>Erica Cochran Hameen, PhD-AECM Track Chair</td>
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<tr>
<td>Ramesh Krishnamurti, PhD-CD Track Chair</td>
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ADDENDUM A
2020 Digital Skills Workshops (DSW)

Part 1: June 22- August 7 (Representation & Computation)
Part 2: TBA (Fabrication)

INTRODUCTION
DSW is a 3-unit mini summer course (#48-689) for incoming SoA Masters students to establish a baseline of digital design skills appropriate to the expectations of the design culture at SoA. This course is mandatory for all incoming MAAD, M.Arch, MUD, MSSD, and MSBPD students. The full extent of the course must be completed in order to receive a passing grade for the course that will appear on the fall semester transcript and is included in the cost of your full time fall tuition. DSW is optional for students in other SoA Masters programs.

DSW Part 1, Representation & Computation, is an online-only series of micro workshops, assignments, and tutorials on digital design skills delivered online. Organized around four short design exercises, students will demonstrate the fundamentals of 2D graphics (Photoshop, Illustrator, InDesign), architectural drafting (Rhino), 3D modeling (Rhino), and parametric modeling (Grasshopper).

DSW Part 2, Fabrication, is a series of hands-on introduction to the woodwork machineries, laser cutter, CNC router, 3D printer, vacuum former, general policies and procedures of the ArchSHOP and Digital Fabrication Laboratory (dFAB) facilities. Students are required to attend in person during the time slots that will be announced towards the end of DSW Part 1 online sessions.

DSW will cover specific tools and workflows to equip students with the foundational skills for solving design problems through the use of computational tools. All SoA students are expected to be familiar with the protocols and workflows covered in DSW.

CANVAS SITE LINK & REGISTRATION
Students must first have an active Andrew ID and use it to register for DSW via the following link: https://forms.gle/v5slUNCsWn7B7Tj9K8

After registration, all information regarding the DSW course will be available via the course Canvas site: https://canvas.cmu.edu/courses/17167
STRUCTURE

There are two sequential parts to the Digital Skills Workshops course:

Part 1: Representation & Computation
- Duration: Jun 22 – Aug 7 (7 weeks)
- Location: online (Web-based via Zoom)
  - Meets twice a week:
    - Lecture/Workshop (1.5hr) — Mondays 10:00 am (EST)
    - Individual Critique (12mins) — Wednesdays/Thursdays time TBA
- Instructor: Eddy Man Kim — mankim@andrew.cmu.edu
- Content:
  - Design studio culture, best practices, and work rigor
  - Fundamental skills in communicating design intent and narrative through the use of drafting, modeling, and rendering workflows
  - Generative and dynamic workflows using Rhino and the Grasshopper scripting platform

Part 2: Fabrication
- Duration: TBA
- Location: on-campus (ArchSHOP - CFA A9; dFAB - MMCH C4) or online covering only digital file preparations depending on COVID-19 situation
  - Date, time TBA
- Instructor: José Perttierra-Arrojo — jpertier@andrew.cmu.edu
- ArchSHOP Manager: Jon Holmes — jcholmes@andrew.cmu.edu
- dFAB Manager: Terry Hritz — thritz@andrew.cmu.edu
- Content:
  - Usage and training protocol for the following fabrication tools: woodwork machineries, laser cutter, CNC router, 3D printer, vacuum former

DETAILS – Part 1: Representation & Computation

Through weekly assignments, workshops/lectures, and mandatory individual critique sessions, Part 1 of the course will establish a baseline of digital design communication and generative design skills while setting certain expectations about studio culture and work rigor at CMU SoA. This part of the course isn’t only about learning software skills but more importantly about establishing a consistent work quality and ethic across the cohort. The weekly breakdown of this part of the course is as follows:

Week 1 – Architectural Drafting & 2D Graphics
Week 2 – 3D Modeling
Week 3 – 3D Modeling
Week 4 – 3D Modeling
Week 5 – Parametric Modeling
Week 6 – Parametric Modeling
Week 7 – Parametric Modeling
DETAILS – Part 2: Fabrication
More information forthcoming on the course Canvas site.

SOFTWARE REQUIREMENTS
You must have the following software installed and ready to use on your own computer before coming to class. If you do not already own these, please refer to ADDENDUM B, “2020 Masters Student Computing Guidelines,” for more instructions and recommendations.

<table>
<thead>
<tr>
<th>Software</th>
<th>Version</th>
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<tr>
<td>Photoshop</td>
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<td>Illustrator</td>
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<td>InDesign</td>
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<td>Rhino</td>
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<td>RobotStudio</td>
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<td>Vray for Rhino</td>
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ONLINE TUTORIALS
CMU students are given full access to all LinkedIn Learning tutorials for free by logging in with their Andrew IDs via this link: https://www.cmu.edu/web/training/linkedin-learning.html. It is strongly recommended that students complete as many tutorials on their own, prior to attending the Part 1 online classes.

Essential
- InDesign CC 2020 Essential Training https://www.linkedin.com/learning/indesign-2020-essential-training/ (5h 4m)
- AutoCAD 2021 Essential Training https://www.linkedin.com/learning/autocad-2021-essential-training/ (3h 58m)
- Rhino 6 Essential Training https://www.linkedin.com/learning/rhino-6-essential-training-2/ (2h 8m)
- Grasshopper Essential Training https://www.linkedin.com/learning/grasshopper-essential-training/ (6h 24m)

Optional
- Illustrator CC 2020 Essential Training https://www.linkedin.com/learning/illustrator-2020-essential-training/ (5h 41m)
- AutoCAD: Construction Drawings https://www.linkedin.com/learning/autocad-construction-drawings/ (3h 18m)
- Architectural Site & Envelope in Rhino https://www.linkedin.com/learning/architectural-site-envelope-in-rhino/ (1h 12m)
- Rhino: Architectural Interior & Detail https://www.linkedin.com/learning/rhino-architectural-interior-detail/ (1h 45m)
- Vray for Rhino Official Documentation https://docs.chaosgroup.com/display/VNFR

Other Resources
• [http://www.grasshopper3d.com/page/tutorials-1](http://www.grasshopper3d.com/page/tutorials-1) (Get started here with access to tutorials, videos, and other resources)
• [https://discourse.mcneel.com/c/grasshopper-developer](https://discourse.mcneel.com/c/grasshopper-developer) (Go here to find answers to specific GH questions from the GH community)
• [https://grasshopperdocs.com/](https://grasshopperdocs.com/) (a list of all GH components with minimal description)
• [http://modelab.is/grasshopper-primer/](http://modelab.is/grasshopper-primer/) (Grasshopper Primer: great pdf reference to have on hand)
• [http://www.food4rhino.com/grasshopper-addons](http://www.food4rhino.com/grasshopper-addons) (Extensions for the Grasshopper environment)
• [http://wiki.mcneel.com/developer/python](http://wiki.mcneel.com/developer/python) (Get started here with tutorials, sample code, etc.)

**GENERAL TEXTS**

• Arturo Tedeschi. *AAD – Algorithms-Aided Design*. (Len Penseur Publisher, 2014) – Full text available – [Full text available online via this link](http://www.grasshopper3d.com/page/tutorials-1)
• Helmut Pottmann, Andreas Asperl, Michael Hofer, and Axel Kilian. *Architectural Geometry*. (Bentley Institute Press, 2007) – [Full text available online via this link](https://grasshopperdocs.com/)
• Wassim Jabi. *Parametric Design for Architecture*. (Lawrence King Publishing, 2013) – [Full text available online via this link](http://modelab.is/grasshopper-primer/)

**QUESTIONS or CONCERNS**

For general questions, contact the instructor at the email address above. For computer and networking problems, please contact the SoA computing services at [soa-itelp@andrew.cmu.edu](mailto:soa-itelp@andrew.cmu.edu).
ADDENDUM B
2020 Masters Student Computing Guidelines

INTRODUCTION
All incoming SoA students are expected to have familiarity with digital tools and workflows. CMU and SoA are world leaders in the area of computation and the many ways it relates to design and architecture, and we expect students to master these tools and skills as part of their education. The stronger your computing skills, the more you will be able to get out of your CMU SoA experience.

To best support your educational experience and success as a student member of the CMU SoA community, you are expected to be prepared with your own sufficiently powerful laptop computer, specific software packages, and essential digital skills that are catered to your curricular needs at SoA. We most strongly encourage you to follow the guidelines below prior to the beginning of your Digital Skills Workshops (on June 22, 2020), and definitely before arriving on campus, to ensure a smooth start to your coursework. Following these guidelines will ensure that you get the best possible support from the instructors, SoA, and CMU. If you have questions or concerns, contact your program Track-Chair immediately.

HARDWARE ESSENTIALS
Design work is often data-intensive and consequently a reliable computer can boost productivity and go a long way in a designer’s career. Hedge against last-minute crashes and unexpected surprises down the line by following the guidelines below.

**Bring Your Own Laptop Computer** — All SoA students are expected to bring their own laptop computers that are sufficiently powerful for coursework. A mobile and powerful computing capability is an essential part of the current design studio culture. Your laptop should be a vessel to communicate your design ideas and not only for your personal use. Beyond doing the actual design work, you will often use your laptop and an external monitor to present during informal desk critiques and formal reviews. Be prepared to be a versatile communicator with your laptop. In addition, public computer labs managed by the university (not by SoA) are available on campus for students to use.

**Limited Apple Computer Support** — The majority of design software packages in your curriculum require the use of Windows-based operating system and powerful processors. While it is possible to run Windows on an Apple computer, there are significant performance drawbacks compared to equivalently priced “PC” laptop. A few of the drawbacks are: limited IT support, throttled overall performance, and poor affordability (bad value). Additionally, since the standard Radeon Pro 555x and 560x graphic cards are below our standards, you will need to upgrade to Vega graphics to stay relevant. If you insist on having an Apple computer, you should get the most powerful one you can afford. You will be expected to be an advanced user and manage on your own with the Apple computer. While VMware and Parallels are popular virtualization tools, they cannot access all of the laptop’s processing power, so Bootcamp will be required for full utilization. CMU or SoA IT Services cannot do this for you—you must do it on your own. If you are stuck with an Apple computer, you should plan on purchasing a new PC laptop sooner rather than later. Avoid this added cost by following this guideline if you don’t have a strong preference.
Laptop Computer Recommendations — In order to ensure that your computer is sufficiently powerful to do the necessary coursework, and to ensure that you get the best possible support from the instructors, SoA, CMU, and the manufacturers, we strongly encourage that you follow the guidelines below:

**Recommended Specifications**
- Operating System: Windows 10
- Processor: Intel 8-Core CPU (Common Models include 9980 / 9880 / 10980 / 10875)
- Memory: 16GB+
- Video Card: RTX 2070 or 2080
- Hard Drive: 1TB SSD

**Minimum Specifications**
- Operating System: Windows 10
- Processor: Intel 6-core CPU (Common Models include 9850 / 9750 / 10850 / 10750)
- Memory: 16GB
- Video Card: GTX 1660+
- Hard Drive: 512GB+

**Possible Upgrade**
A Business Class laptop is more durable and possibly faster than a consumer model.
If this is the path you would like to follow, look for:
- Processor: Xeon 8-core
- Video Card: RTX 4000 or 5000

**Warranty**
We recommend only purchasing from brands that offer 3+ year warranties and adding Accidental Damage coverage if available.

When purchasing your computer, please make sure it is at or above our minimum specification.

We also recommend contacting the [Carnegie Mellon Computing Store](#) prior to purchase. They offer various system configurations with educational discounts exclusive to CMU students.

**Get Extended Warranty** — While the campus is safe, it could be a volatile environment with moving parts, bulky models, sleepless nights, accidental spills, drops, and other accidents that could render you unable to proceed with your work. Unless you are an advanced user, hedge against this risk. Purchase and extend as much of the accidental damage warranty you can afford.

**Monitors Provided** — If you have a desk assignment based on your program, the school will offer external display monitors with optional articulated mounting arms. These are only for use within SoA studios and must be secured. The monitors can natively support both VGA and DVI connections. Other connections may be available via adapters (not provided). Monitors can be checked out through the [Media Center](#) (CFA 213).
Get a Mouse — Using an external computer mouse is necessary in order to take full advantage of most design software packages. Not using one will compromise your productivity and negatively impact your coursework.

Don’t Rely on External Drives — While it is good practice to use external data storage drives such as a Thumb / Flash / USB drive in an ad hoc or emergency setting, relying on them is very risky. They often break, get infected and get lost. For backing up your work automatically on the cloud, take advantage of free unlimited storage on CMU’s Google Drive.

SOFTWARE ESSENTIALS
To ensure that you’re on track when you arrive on campus, this summer you should plan to purchase your laptop, purchase and/or download the software listed below, and install that software before classes begin.

Google Suite
● Essential suite of collaborative tools, including Docs, Sheets, Slides, and Forms.
● Unlimited storage and backup for CMU students via Drive—use this to backup your work!
● Free for CMU students to use with their Andrew IDs. Link to more information.

Creative Cloud All Apps
● Essential suite of digital media tools, including Photoshop, Illustrator, and InDesign
● $20 per month ($240 per year) student license.
  ○ Subscribe at this link: https://www.adobe.com/creativecloud/buy/students.html
● The “All Apps” package is more economical than purchasing apps individually.

Rhino 6 for Windows
● Essential 3D modeling software.
● $140 student license.
  ○ Purchase at this link: https://novedge.com/products/2572
● The Mac version is NOT the same as the Windows version.

AutoCAD 2021
● Industry standard drafting software.
● Free for students.
  ○ Download at this link: https://www.autodesk.com/education/free-software/autocad

Office
● Essential office productivity software.
● Free for students
  ○ Download at this link: https://products.office.com/en-us/student/office-in-education
Windows 10
- This is only for students with an Apple computer creating Bootcamp partitions or other special cases that need a new Windows 10 license.
- Free for students
  - Download at this link: https://www.cmu.edu/computing/software/all/msimagine/index.html

V-Ray for Rhino
- Photorealistic rendering software.
- Free to use network license
  - This option is a bit more complicated in its installation instructions and works only when on the CMU network (on campus or through Cisco VPN). V-Ray Download & Installation Instructions.
- (optional) $99 1-year student license.
  - Purchase at this link: https://store.chaosgroup.com/product/edu-vray-rhino-student

DIGITAL SKILLS WORKSHOPS (DSW)
Incoming students in certain programs may be eligible or required to complete the Digital Skills Workshops course over the summer. The course’s purpose is to establish a baseline of digital design skills across the cohort and an assessment of your skills. For more information about the course, please refer to ADDENDUM A, “2020 Digital Skills Workshops (DSW)”.

ADDITIONAL SUPPORT
If you have any additional questions about laptops, software, or anything IT related for the School of Architecture, please contact soa-ithelp@andrew.cmu.edu.