Course Syllabus

**COLUMBIA UNIVERSITY GSAPP**A4701 SEMINAR – Spring Semester 2019

Prof. Lise Anne Couture

**NextGen: Innovation, Technology and Architecture**

NextGen is a design based seminar that is an exploration of a varied cross-section of potential drivers of change and innovation with respect to the physical and spatial aspects architecture.

The seminar will involve research into diverse and continually evolving, 'state of the art' and emerging technologies that may include biodesign, self-assembling structures, sensor and smart technologies, programmable materials, nanotechnology, 3D and 4D printing, virtual and augmented reality, AI, IoT, robotics, mobility and autonomous vehicles, as well as well as other cutting edge research in other relevant disciplines or areas of design. The class will discuss the cultural, social, environmental and political implications of various technological trajectories and from the perspective of architecture speculate upon future urban, spatial, aesthetic and formal possibilities.

During the last century the mass production of automobiles had a profound impact on architecture, from the transformation of the form of our cities and the invention of the suburbs, to the design of factories and places for a new culture of mass consumption, among other radical shifts. Likewise the development of large scale plate glass radically transformed not only building design and our contemporary urban environment, but also our understanding of the relationship between interiority and exteriority, privacy and publicity, as well as new spatial concepts with respect to the work place and work place culture. In both cases these technological shifts brought about by innovation simultaneously provided both new challenges as well as new opportunities for architectural design. Today, new developments in mobility and AI, advancements in biomaterials and smart materials, the evolution of robotics and sensor technologies among many other technological innovations, continue to transform architecture and cities, as well as our lived experiences within this continually shifting landscape, both collectively and as individuals. While many technological innovations have great promise, difficult challenges or the risk of detrimental consequences are often also present. The seminar is interested in exploring  and debating these contradictions but also in locating, within the paradigm shifts, disruptions and game changing trends driven by technological innovation, those areas that have the potential to open up new opportunities and possibilities for architecture, urbanism or design.

The class format includes lectures or talks by invited guest followed by discussions as well as student presentations. During the course each student will select a research topic and give a brief class presentation. The intention is to provide students with the opportunity to indulge in exploring an area of interest related to technological change and innovation. For the final assignment the students will be tasked to ask “What If” and to generate, and graphically represent, speculative architectural or urban concepts based on a chosen technological interest. These highly ‘speculative’ conceptual proposals, should be thoughtful and critical, yet creative, inventive and provocative projections into our rapidly approaching future.

Past invited guests have included:

Carlo Ratti, Director Senseable City Lab MIT

Paola Antonelli, Director R&D MoMA

Hod Lipson, Director Columbia University Creative Machines Lab

David Kirkpatrick, Founder & CEO Techonomy

Andrew Dent, Executive VP Research Material Connexion

Skylar Tibbits, Director Self-Assembly Lab, MIT

Greg Lynn, Principal Greg Lynn FORM, Professor UCLA and IoA, Vienna

**The course is limited to fulltime students enrolled in a GSAPP Master degree program**