

**EXPECTED COURSE OFFERINGS BY SEMESTER IN THE  
APPLIED AND COMPUTATIONAL MATHEMATICS PROGRAM**

The schedule below is based on historical patterns and expected scheduling. The semester and location in which a course may be offered *is subject to change* due to instructor availability, student demand, and the need to provide an appropriate balance of subjects and course levels in all semesters. Courses may be offered at the Applied Physics Laboratory (APL) (A), online (O), or Virtual Live (VL)<sup>1</sup>, as indicated. Research courses 625.800–808 are held at locations of mutual convenience to the student and instructor. A version of this schedule (not always the most recent) is available at <https://ep.jhu.edu/student-services/academic-services/course-planning/schedule-planning-information>.

Course 625.xxx	Summer	Fall, Odd Years	Spring, Even Years	Fall, Even Years	Spring, Odd Years
108–Calculus I <sup>2</sup>	O	O	O	O	O
109–Calculus II <sup>2</sup>	O	O	O	O	O
201–General Applied Math <sup>2</sup>	O	O		O	
250–Multivariable Calc. & Complex Anal. <sup>2</sup>	O	O	O	O	O
251–Intro. Ordinary & Partial Diff. Eqns. <sup>2</sup>			O		O
252–Linear Algebra <sup>2,3</sup>	O	O	O	VL	O
260–Intro. Signals and Systems <sup>2</sup>		O		O	
601–Real Analysis					VL
602–Modern Algebra		A			
603–Statistical Methods & Data Anal.	O	VL and O	VL and O	VL and O	A and O
604–Ordinary Differential Eqns.	O		O		O
609–Matrix Theory	O	A and O	A and O	A and O	A and O
611–Computational Methods		O			
615–Intro. Optimization <sup>4</sup>		O	O	O	O
616–Optimization in Finance <sup>4</sup>					O
617–Intro. Enumerative Combinatorics <sup>5</sup>			O		O
618–Discrete Hybrid Optimization <sup>6</sup>				VL	
620–Math. of Signal Processing	VL (odd yrs.)				
623–Probabilistic Models				O	
633–Monte Carlo Methods			O		O
636–Graph Theory	VL (even yrs.)				
638–Neural Networks <sup>7</sup>		A	O	A	O
641–Math. of Finance: Invest. Science	O				
642–Mathematics of Risk			VL		
661–Statistical Models & Regression	O	O	O	O	O
662–Design of Experiments					A
663–Multivariate Statistics				A	
664–Computational Statistics		O	O	O	O
665–Bayesian Statistics	VL				
680–Cryptography				A	
685–Number Theory			A		

Course 625.xxx	Summer	Fall, Odd Years	Spring, Even Years	Fall, Even Years	Spring, Odd Years
687–Applied Topology <sup>8</sup>					A
690–Computational Complexity					O
692–Probabilistic Graphical Models <sup>9</sup>			O		
695–Time Series & Dynamic Models		O			
703–Complex Variables <sup>10</sup>	O (even yrs.)				
710–Fourier Analysis			A		
714–Stochastic Diff. Eqns.	O	O	O	O	O
717–Partial Differential Eqns.				O <sup>11</sup>	VL
718–Nonlinear Differential Eqns.		O	VL		
721–Stochastic Processes I	VL (odd yrs.)	VL and A			
722–Stochastic Processes II			VL		
725–Theory of Statistics I	O (even yrs.)			O	
726–Theory of Statistics II					O
728–Theory of Probability			VL		
734–Queuing Theory <sup>12</sup>			A		A
740–Data Mining		O		O	
741–Game Theory <sup>13</sup>				O	
743–Stochastic Optimization					A
744–Modeling & Monte Carlo		A			
800–Independent Study <sup>14</sup>	--	--	--	--	--
801–802 ACM Master’s Research <sup>15</sup>	--	--	--	--	--
803–804 ACM Master’s Thesis <sup>16</sup>	--	--	--	--	--
805–806 ACM PMC Research <sup>17</sup>	--	--	--	--	--
807–808 ACM PMC Thesis <sup>18</sup>	--	--	--	--	--

**NOTES:**

<sup>1</sup>Virtual live (VL) classes are designed to support both remote students and those local to Maryland. In VL classes, students have the option of attending an in-person class lecture or an online class session. The in-person class will be held at APL in Laurel, Maryland. The virtual students will connect via a web conferencing tool enabling two-way voice communication and live video feed with the on-site course. Students who have video enabled computers will be able to share video of themselves with the classroom and other virtual students, if desired. This format enables students to attend the class from remote locations while still participating in live interactions with the instructors and other students. Live sessions will be recorded. Students who are unable to participate at the specific time the class session is held will be able to replay the recording of the class session, which includes the lectures, discussions, and video. Note that due to covid-19, some VL courses may have no students in the classroom and/or may be broadcast from an instructor’s home or other appropriate location.

<sup>2</sup>100-level and 200-level courses are not for graduate credit.

<sup>3</sup>625.252 is a new course in linear algebra (not for graduate credit), to be offered in VL format in summer and fall 2020, and online in succeeding offerings.

<sup>4</sup>Students may not take both 625.615 and 625.616 for credit; students may only take one or the other for credit.

<sup>5</sup>Course is co-listed in the Computer Science Program as 605.623.

<sup>6</sup>New course effective fall 2020.

<sup>7</sup>Course is co-listed in the Computer Science Program as 605.647.

<sup>8</sup>Course is co-listed in the Computer Science Program as 605.628.

<sup>9</sup>Course is co-listed in the Computer Science Program as 605.625.

<sup>10</sup>625.703 will be online beginning summer 2020.

<sup>11</sup>625.717–718 to be offered online beginning fall 2019 (625.718) and fall 2020 (625.717).

<sup>12</sup>Course is co-listed in the Computer Science Program as 605.725.

<sup>13</sup>Course is co-listed in the Computer Science Program as 605.726.

<sup>14</sup>625.800 may be taken only near the end of an M.S. program of study; requires ACM faculty supervisor.

<sup>15</sup>See information at <https://ep.jhu.edu/files/acm-research-thesis.pdf>.

<sup>16</sup>See information at <https://ep.jhu.edu/files/acm-research-thesis.pdf>.

<sup>17</sup>For students in the post-master's certificate (PMC) program. See information at <https://ep.jhu.edu/files/acm-research-thesis.pdf>.

<sup>18</sup>For students in the post-master's certificate (PMC) program. See information at <https://ep.jhu.edu/files/acm-research-thesis.pdf>.