

**Kazuo Inamori School of Engineering
Graduate Degree Requirements**

Ph.D. Materials Science and Engineering

Undergraduate Preparation	<ul style="list-style-type: none"> • Four year degree in physical sciences or engineering
Total credit hours	<ul style="list-style-type: none"> • Ninety (90) hours of graduate credit, including at least 33 hours of coursework and at least 30 hours of thesis credit
Residency requirement	<ul style="list-style-type: none"> • Two years of full-time registration
Transfer Credit	<ul style="list-style-type: none"> • Up to 15 credit hours of relevant graduate work, subject to approval by the Graduate Program Director
Course Work	<p>At least 33 credit hours of course work, including</p> <ul style="list-style-type: none"> • CEMS 501 – Solid State Physics (3 credits) • CEMS 502 –Quantum Physics (3 credits) • CEMS 503 – Thermodynamics of Materials (3 credits) • CEMS 504 – Kinetics and Non-equilibrium Processes in Materials (3 credits) • CEMS 505 – Defects and Defect-related Processes (3 credits) • CEMS 506 – Advanced Engineering Math (3 credits) • CEMS 545 – Characterization in Materials Science and Engineering (3 credits) • Graduate-level technical electives (12 credits) • ENGR 690 – Graduate seminar (0 credits) each semester of full-time enrollment
Thesis Credits	<p>At least 33 credit hours of thesis, including</p> <ul style="list-style-type: none"> • ENGR 660 – Research seminar (1 credit), preferably taken during the first semester of graduate enrollment • CEMS 680 – Thesis research (32 credits)
Progress Reports	<ul style="list-style-type: none"> • One-page progress report summarizing thesis progress and plans for upcoming semester
Qualifying Exam	<ul style="list-style-type: none"> • Three-hour written exam covering undergraduate-level materials science and engineering* • Successful oral defense of written research proposal* <p><i>* Two attempts allowed. Typically completed within first year of admission.</i></p>
Written Thesis and Oral Defense	<ul style="list-style-type: none"> • Written thesis meeting approval of thesis advisory committee • Successful oral defense of thesis
Length of Study	<ul style="list-style-type: none"> • Designed to be completed in 4.5 years of full-time study after admission with bachelor's degree or in 3 years of full-time study after admission with a master's degree.