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

### Ph.D. Ceramics

<table>
<thead>
<tr>
<th><strong>Undergraduate Preparation</strong></th>
<th>• Four year degree in physical sciences or engineering</th>
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<tbody>
<tr>
<td><strong>Total credit hours</strong></td>
<td>• Ninety (90) hours of graduate credit, including at least 33 hours of coursework and at least 30 hours of thesis credit</td>
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<td><strong>Residency requirement</strong></td>
<td>• Two years of full-time registration</td>
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<td><strong>Transfer Credit</strong></td>
<td>• Up to 15 credit hours of relevant graduate work, subject to approval by the Graduate Program Director</td>
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| **Course Work**              | At least 33 credit hours of course work, including  
  • CEMS 501 – Solid State Physics (3 credits)  
  • CEMS 503 – Thermodynamics of Materials (3 credits)  
  • CEMS 504 – Kinetics and Non-equilibrium Processes in Materials (3 credits)  
  • CEMS 506 – Advanced Engineering Math (3 credits)  
  • Graduate-level technical electives (21 credits)  
  • ENGR 690 – Graduate seminar (0 credits) each semester of full-time enrollment |
| **Thesis Credits**           | At least 33 credit hours of thesis, including  
  • ENGR 660 – Research seminar (1 credit), preferably taken during the first semester of graduate enrollment  
  • CEMS 680 – Thesis research (32 credits) |
| **Progress Reports**         | • One-page progress report summarizing thesis progress and plans for upcoming semester |
| **Qualifying Exam**          | • Three-hour written exam covering undergraduate-level materials science and engineering*  
  • Successful oral defense of written research proposal* |
  *Two attempts allowed. Typically completed within first year of admission.* |
| **Written Thesis and Oral Defense** | • Written thesis meeting approval of thesis advisory committee  
  • Successful oral defense of thesis |
| **Length of Study**          | • 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. |