Rowan University™

College of Graduate & Continuing Education (CGCE)

PROGRAM OVERVIEW
FOR ACADEMIC YEAR 2013-2014

Master of Science in Electrical & Computer Engineering (MS) face-to-face format
TRADITIONAL FORMAT DIVISION –FELLOWS-ELIGIBLE PROGRAM

Program at a Glance

- **Credits:** The program consists of 7-10 courses and a total of 30 graduate semester hours (SH).
- **Part-time/full-time:** The program is part-time or full-time; however, students may be required to enroll for a certain number of credit hours each term depending upon the track chosen.
- **Duration:** Full-time students can usually complete the program in 4-5 consecutive semesters including summers.
- **Format/location:** The program is offered in a face-to-face format on Rowan's Glassboro campus.
- **Course structure:** With any exceptions noted on the chart within this document, courses are offered in traditional 15-16 week semesters.
- **Graduation/Exit/Thesis Requirements:** See page 3 of this document.
- **Course descriptions** are available at http://www.rowan.edu/catalogs/.

Summary of CGCE, and the Admission, Matriculation and Registration Processes

- CGCE is Rowan University's vehicle to reach out and serve the adult population including college graduates seeking to pursue post-bac, graduate, or doctoral studies, former college students who need to continue studies in order to obtain their Bachelor's degree, or employees/employers seeking professional development. CGCE Admissions & Enrollment Services oversees admission, matriculation and registration issues for CGCE's credit-bearing courses and programs. If/when admitted, all students are required to submit a Matriculation Signature Page to CGCE which allows you to be officially matriculated and activated in our student information system and reserves your spot in the program for that particular term of entry.
- **Traditional format Division students:** After you are matriculated, your next step is to consult with your Academic Advisor to determine which courses you should take each term. Then you will be ready to register yourself online. (You are expected to register for coursework in the term in which you were admitted and matriculated.) Detailed instructions about all of the steps you should take between initial admission and when courses begin are outlined for you in your emailed admission packet from CGCE. Matriculated students should review this information very carefully and be sure to follow all steps in a timely manner so you are prepared to begin your coursework.

Program Features

- The Master of Science (MS) in Electrical & Computer Engineering provides students with the opportunity to expand their skills in specialized areas of interest.
- This program provides students with the necessary knowledge, skill set, and training to effectively contribute to the engineering workforce.
- Program focus areas include sustainable engineering, smart sensors and smart grid, robotics, nanotechnology, speech and signal processing, virtual reality, biomedical engineering, genomic signal processing and bioinformatics, dynamical systems, discrete event systems, embedded systems, computational intelligence and machine learning, and systems engineering.
- This program has **two tracks available**. Applicants select their preferred track at the time of application that best matches their educational needs and goals.
  - Track I is the "Thesis Track" and is intended for those applicants who desire to perform research as part of their graduate education. Track I students may enroll either part-time or full-time. Students are required to produce and defend a thesis. (All applicants to the Thesis Track will be automatically considered for a Fellowship. Please see the "Costs and Financial Aid" section of this document for more details about the Fellowship, including enrollment expectations.)
  - Track II is the "Coursework Only Track" and is intended for those applicants who do not plan to pursue a thesis. Track II students may enroll either part-time or full-time. Students in the Coursework Only Track may choose to work on a final project in their area of interest, which may count for up to 3 credits towards their degree requirements.

Contact Information

- For **questions about this program or academic matters**, please contact the Academic Advisor: Robi Polikar 856-256-5372 or polikar@rowan.edu
- For **questions about the application process or the status of your application**, please contact CGCE Admissions: 856-256-5145 or cgceadmissions@rowan.edu
- For **questions about CGCE or if you are already admitted and have questions about matriculation or registration,** please contact the CGCE Enrollment Services Office: 856-256-5435 or cgceenrollment@rowan.edu.
- **For questions about program selection and all options and opportunities available,** you might benefit from speaking with a CGCE Recruiter at 856-256-4747 or cgce@rowan.edu.

Disclaimer: The information provided in this document is subject to change. Programs that do not meet enrollment minimums may not run every entry point listed. In most cases, students will have the option to roll or defer to a later entry point if needed. For the most up-to-date information about your program requirements, always check directly with your Academic Advisor.

Admission Requirements

Summary of the Application Process

1. Review the information and admission requirements included in this document.
2. Review the admission policies and instructions in the application/instruction packet and complete the appropriate CGCE application form (www.rowan.edu/cgce/forms).

   Include the proper program code, major code, and entry term on all application forms/materials you submit.
   - **Program: MS-ECENGR**
   - **Major: G903**
3. Submit the completed application form and all other required application materials as early as possible but no later than the deadline listed to:

   Rowan University
   CGCE Admissions
   James Hall, Room 3129
   201 Mullica Hill Road
   Glassboro, NJ 08028

- Faxed items (856-256-5637) are acceptable for everything except official test scores, official transcripts, and letters of recommendation.
- Please do not send materials to any address or office other than the one above as this will delay processing.

Admission

Admission to Rowan University as an undergraduate, post-baccalaureate, or graduate student is competitive. Admission committees use different criteria, according to the requirements of the discipline/profession and the number of applicants applying to the program. Each of the components of the application packet are carefully reviewed and taken into consideration for each candidate.

Rowan University does not discriminate on the basis of race, color, age, sex, religion, creed, national origin, sexual orientation or disabling condition. University policies are consistent with federal and state laws pertaining to equal opportunity in admissions and education policies and in scholarships, loans, athletics and other school-administered programs.

Admission Requirements for the MS in Electrical & Computer Engineering

- ❑ Completed CGCE Post-baccalaureate/Graduate/Doctoral Application Form (www.rowan.edu/cgce/forms)
- ❑ $65 (U.S.) non-refundable application fee
- ❑ Bachelor's degree (or its equivalent) from an accredited institution of higher learning
- ❑ Official transcripts from all colleges attended (regardless of number of credits earned)
- ❑ Current professional resume

PLUS

- ❑ Typewritten statement of professional objectives
- ❑ Two letters of recommendation
- ❑ Minimum cumulative undergraduate GPA of 3.0 or better (on a 4.0 scale)
- ❑ CGCE Foundation Course Completion Form Please see foundation course requirements listed below under Program Requirements.
  - o During the admissions process, the Engineering Academic Advisor will determine foundation course equivalencies and how any unfinished undergraduate foundation courses can be scheduled concurrently with graduate enrollment. Foundation courses may not be available in an online format. If applicable, official notification of any unfinished foundation courses will be included in the applicant's official admission decision letter from Rowan University.
- ❑ CGCE MS in Electrical & Computer Engineering Track Declaration Form
- ❑ Optional interview (If an interview is required, students will be contacted directly by the Faculty Admissions Committee regarding the interview. The interview can be in person or via telephone.)
  - o An interview will typically be required for students applying to Track I/Thesis Track to determine their academic preparation to undertake a rigorous research program.
  - o An interview may also be required for students whose application may not be as strong as the rest of the applicant pool, but who the Committee believes demonstrates academic promise. If admission is granted in such cases, the admission is typically probationary and is subject to either the successful completion of a fixed number of courses (each with a grade of B or better), or another requirement as outlined by the Committee.

Note: A GRE exam is NOT required; however, GRE scores will be used in evaluating the applicant should the applicant choose to provide these scores. Students interested in the Coursework Only Track are particularly encouraged to submit GRE scores if they believe their academic background is stronger than what is implied by their GPA.

Important Additional Admission & Technical Requirements:

- In order to be successful in CGCE programs, <u>all</u> students are also required to be proficient in basic computing skills, at ease with both daily email usage and word-processing, and prepared to access online web content on a regular basis.
- Applicants for online programs or programs with web/online components are required to be able to meet the technology requirements outlined at www.rowanonline.com/current_students/technology.
- If you are a non-native English speaker or a non-U.S. citizen requiring an F-1 or J-1 visa, there are additional admission requirements concerning the submission of translated/evaluated transcripts and TOEFL or IELTS test scores. You will also need to work directly with Rowan's International Center (http://www.rowan.edu/internationalcenter) to obtain the I-20 which is necessary to obtain the visa needed to study in the U.S. at Rowan University. (Details about each of these additional requirements are included in the official application or you may contact cgceadmissions@rowan.edu for more information.)

Application Deadlines & Program Entry Points

We recommend that students <u>apply as early as possible</u>. Applications must be <u>complete</u> by the deadline for the particular program in order to receive a decision before classes begin.

- **Fall 2013** (**Application deadline: 08/01/13**)
- **Spring 2014** (**Application deadline: 11/01/13**)
- **Summer 2014 (Application deadline: 04/01/14)**

This program offers rolling admissions.
Visit www.rowan.edu/cgce for the corresponding start dates for each entry point listed above.

Note: Seats for the Fellowship will be filled on a first-come, first-served basis as qualified applications are received. Therefore, students interested in the Fellowship are encouraged to apply well in advance of the application deadlines.

Foundation Courses: The

following undergraduate courses must be taken at an accredited institution prior to matriculation in the graduate program: Chemistry I, Physics I, Calculus I, II, and III, Linear Algebra, and Differential Equations.

Graduation/Exit/Thesis Requirements: All thesis track

students must successfully complete and defend the Master's Thesis.

Minimum Required Grades and Cumulative GPA: All

matriculated Rowan post-bac and graduate students are expected to maintain satisfactory academic progress each term of enrollment.

In order to maintain satisfactory academic progress each term and to successfully complete the program as a whole, the **MS in Electrical & Computer Engineering** requires students to meet the following conditions:
- Earn no grades lower than a "B-"
- Earn an official cumulative GPA (according to matriculation level) of at least 3.000 on Rowan's 4.000 scale

For full details about the Minimum Satisfactory Academic Progress policy and the Minimum Graduation Requirements policy please visit: www.rowan.edu/cgce/policies.

Rowan Policy Information: Admission policy for CGCE prospective students is listed in the CGCE application instructions available to download from: www.rowan.edu/cgce/forms. Once you are a current student, you are expected to become familiar with and follow the student policies as outlined in the Rowan Student Handbook (http://www.rowan.edu/studentaffairs/community standards/handbook.html). CGCE students, CGCE Extension students (those in online, hybrid, off-site, and/or accelerated programs), and non-CGCE students who are enrolled in CGCE Extension courses should be aware that they may be required to follow slightly different policies, practices and/or deadlines. More information regarding CGCE-specific policies is listed at: www.rowan.edu/cgce/policies.

Required Courses for Program

Below is a list of the required courses for the program.

Total Credit Hours (SH) Required for the Program: 30

Required Courses:

Course #	Course Title	Semester Hours
MATH 01515	**Engineering Applications of Analysis** *[No pre-reqs]* *Or an approved graduate level Math-intensive course determined in consultation with Academic Advisor*	3
TBD	**Approved Engineering Application of Computers course** (determined in conjunction with Academic Advisor)	3
TBD	**Approved Business Course** (determined in conjunction with Academic Advisor)	3

Required Specialized Courses: *Choose 12 s.h. (Thesis Track) or 15-21 s.h. (Coursework Only Track) from the following options in consultation with Academic Advisor*

Course #	Course Title	Semester Hours
ECE 09504	**Special Topics in Electrical & Computer Engineering** *[Pre-reqs may vary*] Can be taken multiple times, when approved by the advisor. Multiple sections of this course are offered during each semester with different content on emerging topics.*	3
ECE 09551	**Digital Signal Processing** *[No pre-reqs]*	3
ECE 09552	**Digital Image Processing** *[No pre-reqs]*	3
ECE 09553	**Digital Speech Processing** *[No pre-reqs]*	3
ECE 09554	**Theory and Engineering Application of Wavelets** *[No pre-reqs]*	3
ECE 09555	**Advanced Topics in Pattern Recognition** *[No pre-reqs]*	3
ECE 09556	**Embedded System Design** *[No pre-reqs]*	3
ECE 09560	**Artificial Neural Networks** *[No pre-reqs]*	3
ECE 09521	**Fundamentals in Systems Engineering** *[Pre-req: ECE 09321*]*	3
ECE 09566	**Advanced Topics in Systems, Devices and Algorithms in Bioinformatics** *[Pre-req: ECE 09351*]*	3
ECE 09572	**Advanced Smart Grid** *[Pre-reqs: ECE 09342, ECE 09321*]*	3
ECE 09573	**Advanced Smart Sensors** *[Pre-reqs: ECE 09342, ECE 09311, ECE 09321*]*	3
ENGR 01510	**Finite Element Analysis** *[No pre-reqs]*	3
ENGR 01511	**Engineering Optimization** *[No pre-reqs]*	3

Thesis/Research/Project: *9s.h. required for Thesis Track, 3-6s.h. may be chosen for Coursework Only Track*

Course #	Course Title	Semester Hours
ENGR 01599	Masters Research *[No pre-reqs]*	6-9

Notes about coursework
1. SH/s.h.: Semester Hours
2. All courses are subject to run based upon meeting enrollment minimums.
3. Any of the courses (in **bold**) are available for students to take as non-matriculated students. To enroll in one of these courses, please submit to the Admissions & Enrollment Services Office the CGCE Activation & Registration Form available to download from www.rowan.edu/cgce/forms.
4. Remember that in order to be eligible for federal aid each term, you must be in a degree-seeking program and your enrollment each term must meet the minimum SH as outlined in this document.
5. Pre-requisites are accurate as of the date on this document. For the most up-to-date information on pre-requisites and course restrictions, please refer to the Section Tally listed below.
6. Available courses and the terms and times in which they are offered (as well specific start and end dates and any skipped dates) are listed in Rowan's searchable Section Tally: http://banner.rowan.edu/reports/reports.pl?task=Section_Tally.
7. ***Note**: Permission of the instructor may waive pre-requisites.

A Note about Terms and Modules: On your application, you will be asked to what term and module you want to apply. This program is offered through our CGCE Traditional format Division. The Rowan academic year (fall, spring, and summer terms) is divided into six modules, two modules per term, each module 8 weeks long. The CGCE Traditional format Division, only admits during Modules 1 (beginning of Fall), 3 (beginning of Spring), or 5(beginning of Summer). With rare exceptions, all classes in this Division are 16 weeks long, spanning 2 modules each term.

Exact start dates vary by program and mode of delivery but will be listed by class in the official Rowan Section Tally (http://banner.rowan.edu/reports/reports.pl?task=Section_Tally) each term.

Transfer Credit Evaluation Process and Policy

1. The CGCE **MS in Electrical & Computer Engineering** program allows incoming matriculated students to transfer up to 6 graduate credits into the program providing a grade of B or better was earned, the courses and credits are deemed equivalent to required courses and credits in the sequence, and the coursework was taken within the past 10 years.
2. Transfer credit at the graduate or post-bac level is only evaluated upon request. Instructions and forms for requesting transfer credit are available from the CGCE website at www.rowan.edu/cgce/forms.
   a. Transfer Credit Evaluation Forms must be submitted to CGCE Enrollment Services by the same application deadline for your program of interest.
   b. Evidence supporting this request (official transcripts, syllabi, and course descriptions) must also be included with the request form.
   c. Transfer credit is not fully evaluated or posted until a student is admitted and matriculated.
3. Transfer credit is evaluated by the academic department. Once the transfer credit evaluation/review process is complete, you are notified by CGCE Enrollment Services and any awarded credit is posted by the Registrar to your account on Rowan Self Service at www.rowan.edu/selfservice. (Instructions for viewing posted transfer credit are available at www.rowan.edu/cgce/forms.)
4. Any questions about awarded transfer credit should be directed to your Academic Advisor, whose name and contact information are included in this Program Overview.

Costs and Financial Aid

Costs: Costs for CGCE programs/courses are available at www.rowan.edu/cgce/tuition.

Financial Aid: CGCE students may be eligible for financial aid. To apply for financial aid, all students must complete the Free Application for Federal Student Aid (FAFSA) online at www.fafsa.ed.gov. (Rowan's FAFSA code is 002609.) Aid eligibility is subject to a minimum credit count each term (4.5 SH for graduate students and 6 SH for undergraduates). Visit www.rowan.edu/cgce/financialaid for a more complete overview. You need not wait to be admitted in order to apply for financial aid. Admission is a separate process from aid and does not consider financial need.

Funding: Graduate students admitted to Rowan CGCE programs may be eligible for institutional and/or grant-supported funding. For more details, please visit: http://www.rowancgce.com/assistantships. This site lists information about Graduate Assistantships and Graduate Research Assistantships while the box below outlines information regarding our Fellows program.

Funding for Graduate Fellows
The CGCE **MS in Electrical & Computer Engineering** program is a Fellows-eligible program which means all applicants to Track I of the program are automatically considered for a Fellowship award during the admission evaluation process, and award decisions are made by the academic department at the same time as the admission decision. Selection is competitive. Applicants awarded Fellowships will be notified of such by CGCE Admissions via the admission offer packet, which will include the Graduate Fellowship Agreement Form. Fellowship awards can only be offered to formally-*admitted* students and can only be processed for officially *matriculated* students. Fellowship amounts vary but may be available up to the full cost of attendance. Fellowships will be of two types: Research Fellowships or Teaching Fellowships.

The Graduate Fellowship Agreement Form outlines the Fellowship type as well as the specific funding amount provided to the student. The student signature on that document confirms the student understands all Fellowship expectations.

To maintain status as a Fellow, all students must, at a minimum:
- Be an admitted, matriculated and active student in good standing in a graduate-level degree program at Rowan University.
- Register for at least 4 consecutive terms.
- Registration each term meets or exceeds the enrollment minimums outlined on the Fellowship Agreement Form and follows any enrollment guidelines from their particular academic program. This will typically be full time (9-12 SH) in fall and spring, and part-time (3-9 SH) in summer. (*International students must be full-time each term of enrollment unless other formal arrangements are made in writing with the program, CGCE, and the International Center.*)
- Maintain a minimum 3.000 cumulative GPA each term and adhere to the Minimum Satisfactory Academic Progress policy for their particular academic program. (www.rowan.edu/cgce/policies)
- Commit significant hours each week of each term to academic research under the guidance of their Advisor/Program Coordinator/Research Supervisor.
- Work with faculty members on research projects leading to the Master's thesis.

In addition to the above, Fellows *receiving stipends* must:
- Submit the additional hiring paperwork listed within the Fellowship Agreement.
- Commit additional hours each week of each term to academic research.

In addition to all of the above, those designated as *Teaching Fellows* must:
- Teach two 3-credit courses within their first four terms of enrollment as agreed upon with their academic program/department.

Full details about the student costs, funding provided, and all expectations and responsibilities required of Fellows are included in the official Graduate Fellowship Agreement Form, which can be obtained from your academic program or from CGCE Academic Services. Fellowship Agreements are subject to change due to changes in funding availability. No university or department-sponsored fellowship is available after students have reached the 30-credit limit.

08.19.13