

CHEMISTRY GRADUATE SCHOOL GUIDELINES AND POLICIES FOR THE MS CHEMISTRY PROGRAM

1. ENTRY REQUIREMENTS

- 1.1. The applicant must comply with all the graduate school admission requirements of DLSU.
- 1.2. He/she must be a BS Chemistry graduate who has taken a minimum of 34 Units of chemistry courses, 5 Units of Calculus and 5 Units of Physics (minimum requirements listed below). Admission of applicants who graduated in related fields is subject to the approval of the Chemistry Graduate Committee (CGC). Graduates from related fields may be required to take bridging and/or refresher courses.

General Chemistry 10 Units (Lec & Lab)
Inorganic Chemistry 3 Units (Lec & Lab)
Organic Chemistry 5 Units (Lec & Lab)
Analytical Chemistry 5 Units (Lec)
Physical chemistry 5 Units (Lec & Lab)

Chemical instrumentation 3 Units (Lec)
Biochemistry 3 Units (Lec)
General Physics (5 Units)
Integral and Differential Calculus (5 Units)
Chemistry or Science Thesis & Practicum(6 Units)

- 1.3. The applicant must pass the entrance examination given by the admissions office as well as the proficiency examination in five areas of Chemistry.
- 1.4. The Proficiency Examination
- 1.4.1 He / She must pass the proficiency examination in all 5 fields (60% passing): Inorganic Chemistry, Organic Chemistry, Analytical Chemistry, Physical Chemistry, and Biochemistry.
- 1.4.2 The Chemistry Graduate Program Coordinator (CGPC), in consultation with the Chemistry Graduate Committee (CGC), will evaluate the applicant's academic records and proficiency examination results to determine if he/she may be admitted as a regular MS student or on probation.

¹ The Chemistry Graduate Committee (CGC) is composed of all chemistry faculty members teaching graduate courses except those who are enrolled in the graduate program

² Allied fields: Biochemistry, Pharmaceutical, Agricultural Chemistry, Molecular Biology/Biotechnology, Environmental Science, Food Science, Geochemistry, and Chemical Engineering

2. PROGRAM REQUIREMENTS

Advance Academic Writing ³	(6 units)
Core/Major Courses	18 units
Cognate/Elective Courses	9 units
Graduate Seminar	3 units
Directed Research	0 Unit
Thesis	6 units
Comprehensive Examination	0 unit
Total	36 units

³Advanced Academic Writing is a remedial English course for graduate students based on the admission examination result. The student may be exempted from taking the both remedial courses. Alternatively, A student advised to take these remedial classes may be exempted from taking the second remedial course.

CORE COURSES

Structural Concepts in Inorganic Chemistry	3 units
Advanced Analytical Techniques in Chemistry Lecture	3 units
Advanced Analytical Techniques in Chemistry Laboratory	1 unit
Organic Reactions and Mechanisms	3 units
Organic Reactions Laboratory	2 units
Quantum Chemistry 1	3 units
Advanced Biochemistry	3 units

TOTAL 18 Units

- 2.1. Core courses (18 Units) include: Structural Concepts in Inorganic Chemistry (CHM603M), Advanced Analytical Techniques in Chemistry Lecture (CHM621M), Advanced Analytical Techniques in Chemistry Laboratory (CHM622M), Organic Reactions and Mechanisms (CHM643M), Organic Reactions Laboratory (CHM644M), Quantum Chemistry 1 (CHM661M), and Advanced Biochemistry (CHM683M).

- 2.2 Elective courses are preferably in the student's field of specialization. New courses may be opened according to the expertise and availability of a faculty member. Special classes may be opened for elective courses.

3. TRANSFER CREDITS

A maximum of 6 Units of lecture core courses earned from an accredited and recognized HEI may be credited or transferred provided the grade is not lower than 2.5. Masteral thesis units may not be transferred.

4. RETENTION AND RESIDENCY

1. The student will be dismissed from the program if he/she incurs two (2) grades of "0.0"
2. An average of 2.0 from the grades obtained for every 3 – term period with no grade lower than 2.0 has to be maintained to stay in the MSChemistry program.
3. As mandated by CHED a student should be enrolled in the MS Chemistry program for a minimum of one year to a maximum of 5 years. An extension of a maximum of 3 years may be allowed provided the student enrolls in one 3- unit penalty course for every year of extension.
4. For transferees or shiftees: the student must have enrolled in the program for at least a year to graduate from the program.
5. Students who are not enrolled in any course must apply for residency.

5. RESEARCH

- 5.1. Ethics in research: the HEI, the thesis mentor and the students must
 - 5.1.1. practice integrity of research at all times.
 - 5.1.2. maintain a safe and secure working environment.
 - 5.1.3. establish ownership of research results before the project commences.
- 5.2. Change in thesis mentor
This is highly discouraged. If this cannot be avoided the following should be observed. The student must seek the advice of the department's graduate coordinator. The student and the graduate coordinator must then talk to the thesis mentor.
 - 5.2.1. If a Settlement has been reached
 - Once the mentor and the graduate coordinator come up with an agreement they must present this to the Chemistry Graduate Committee (CGC) and the Department Chair.

- If there are sensitive issues involved and agreed upon they must be presented in written form and witnessed by the Chemistry Graduate Program Coordinator (CGPC) and the Department Chair.

5.2.2. If no settlement has been reached the case will be elevated to the Chemistry Graduate Committee (CGC). The following points may be considered:

- Who owns the research project?
- Can the student retain the research problem or not?
- Is monetary compensation required, e.g. has the research owner been committed to finish the project? Has money been spent by one party so that it has to be carried on to completion?
- Has the new mentor supervised a similar project before? Can the project owner entrust the student to a new mentor?
- Will the student defend a new proposal?
- Will the proposed change extend the student's time to finish the work?
- Is the student on scholarship? What are the implications of the proposed changes to the student's scholarship provisions?

The CGC must reach a decision regarding the change in thesis mentor not later than one month after the first meeting. Elevation of the case to the Dean's office is highly discouraged.

5.3. Intellectual Property

Every member of a research group is expected to comply with the provisions of the Student Handbook, Appendix O, on Intellectual Property.

5.4. Directed Research

5.4.1 The MS Chemistry graduate student may start working on a research project as indicated in his/her program of study by enrolling in Directed Research. Students are encouraged to enroll in Directed Research as early in their program as possible.

5.4.2 Directed Research will be offered every term. The course carries zero (0) unit; however, the student will be asked to pay for three laboratory units. The student may enroll in this course for an unlimited number of times until he/she becomes eligible to enroll in Thesis.

5.4.3 A student enrolled in Directed Research or Thesis is required to present proof of his/her enrolment in this course before he/she is allowed to work in the laboratory.

5.4.4. Each research student must pass the Safety and Risk Assessment before he / she is allowed to work in the laboratory.

5.5. The Proposal Defense

5.5.1 Three panelists or examiners to include one external member must sit in a proposal defense. The Reader will serve as chair of the Panel of Examiners.

- 5.5.2 The student must submit to the Chemistry Graduate Program Coordinator (CGPC) the following at least 3 weeks before the intended defense date
- a) a copy of the manuscript (3 copies)
 - b) the target date of defense,
 - c) the names of the reader and panel members, and
 - d) the contact numbers of the intended reader and panel members
- 5.5.3 The CGPC will invite the prospective Reader stipulating his/her duties and responsibilities (CGP Form 01A1).
- 5.5.4 The prospective Reader may indicate his/her willingness to examine the paper by returning the conforme form (CGP Form 01B1) to the CGPC.
- 5.5.5 The Reader is given a copy of the proposal at least 3 weeks before the intended date of defense. He / She is also given a copy of the Examination Report (CGP Form 01C1). The Reader returns the accomplished proposal examination report (CGP Form 01C1) to the coordinator at most a week after receipt of the manuscript.
- 5.5.6 The CGPC invites the prospective panel members (CGP Form 01A2); the panel members return to CGPC the conforme form (CGP Form 01B2) before a copy of the manuscript is given to them; each Panel Member returns the Proposal Examination Report (CGP Form 01C2) at most a week after receipt of the manuscript. The Oral Proposal Defense schedule is then finalized.
- 5.5.7 After the defense, the defense panel chair should submit the consolidated comments from the panel of examiners to the CGPC, the student's mentor, the student and all members of the panel.

5.6. Final Oral Defense

- 5.6.1 The three proposal panelists must preferably sit in the final oral defense. The Reader remains as chair of the Defense Panel. Only one member of the panel may be absent during the oral defense on the condition that he / she submits the examination report (Parts 1 and 2).
- 5.6.2 The procedure followed will be the same as the proposal defense: the CGPC invites the reader (CGP Form 02A1); the reader returns the conforme form (CGP Form 02B1).
- 5.6.3 The student submits a copy of the manuscript to the Reader at least 3 weeks before the intended date of defense. The Reader is expected to return the examination report (CGP Form 02C1) to the CGPC within 1 week after receipt of the manuscript. The reader's report is relayed to the student's mentor. The reader's comment should also express the student's readiness to defend his / her work.
- 5.6.4 The CGPC will invite the panelists stipulating their duties and responsibilities (CGP Form 02A2). Each prospective panelist indicates his/her willingness to examine the paper for the final oral defense by returning the conforme form (CGP Form 02B2).
- 5.6.5 The panelists are provided with copies of the thesis manuscript for examination and the evaluation form (CGP Form 02C2 Part 1). Results of the panel evaluation should be given to the Reader at most 4 days before the scheduled final defense.

- 5.6.6 The Panel Chair must provide the CGPC with a copy of the consolidated examiners' report (Part 1) prior to the oral defense. The CGPC relays the result to the Student's mentor. They in turn discuss it with the student prior to the student's final oral defense.
- 5.6.7 After the defense, the defense panel chair should submit the consolidated comments from the panel of examiners to the CGPC, the student's mentor, the student and all members of the panel.
- 5.6.8 The student must submit a laboratory clearance to the CGPC before the final oral defense.

6. SEMINAR AND RESEARCH COURSE

- 6.1 The objectives of the graduate research and seminar are: to train the student to carry out independent search of the literature, to expose the student to various areas of Chemistry, and to train him/her in the written and oral delivery of a technical paper.
- 6.2 The course includes delivery of a seminar and research proposal, attendance in departmental and external seminars, submission of a research proposal, among others.

7 COMPREHENSIVE EXAMINATION

- 7.1. The student must pass the written comprehensive examination in five fields.
- 7.2. If the student fails the re-take examination, he/she must enroll in a refresher course before he/she can take it the third time.
- 7.3. Two or more faculty members will prepare the comprehensive examination for every field. A generic section will be opened as team-taught course.
- 7.4. A student may take the comprehensive examination up to 3 times only. Failing in any area of the written comprehensive examinations three (3) times will render the student ineligible to continue in the program.

8. GRADES

- 8.1 The minimum grade with credit is 2.0.
- 8.2 A grade of Audit (A) is given for courses taken for personal enrichment as well as those enrolled for comprehensive exam re-take. A student taking Directed Research is also given a grade of Audit. A student taking Thesis is given a grade of 9.9 until he/she completes all requirements.
- 8.3 Grades for penalty courses for re-admission should not be lower than 2.0.
- 8.4 Incomplete grade is discouraged for all graduate courses.
- 8.5 The deadlines for submission of final grades and the grade consultation schedule follow that of the undergraduates. The department secretary will arrange the grade consultation schedule.

9. GRADUATION REQUIREMENTS

- 9.1 The student must submit a hard copy of the thesis, a poster, and a published article in a reputable Science Journal to the Chemistry Graduate Program Coordinator (CGPC). Alternatively, a letter acknowledging submission of article from the journal editor may be submitted in place of the published article.
- 9.2 Registrar's requirements: 5 electronic copies (2 for the department and 3 for the Registrar's office), Signed Thesis Approval Sheet, Defense Panel Report and a Panel Chair report, regarding satisfactory revisions.

10. FUNCTION OF THE CHEMISTRY GRADUATE COMMITTEE (CGC)

- 10.1 Formulate policies and guidelines to manage the program
- 10.2 Implement the program
- 10.3 Review and monitor the program regularly

20 May 2015

CHEMISTRY GRADUATE SCHOOL GUIDELINES AND POLICIES FOR THE PhD CHEMISTRY PROGRAM

Approved by: (1) Chemistry Department (06 August 2010)
(2) Council of Chairs (17 August 2010)
(3) College Council (14 January 2011)
(4) Revisions approved by Chemistry Graduate Committee (24 October 2014)

1. ENTRY REQUIREMENTS: PhD CHEMISTRY PROGRAM

- 2.1. The applicant must comply with all the graduate school admission requirements of DLSU
- 2.2. He / She must be a BS Chemistry graduate who has taken a minimum of 48 units of Chemistry, 6 units of Calculus and 3 units of Physics. Admission of applicants who graduated in related fields is subject to the approval of the Chemistry Graduate Committee. Graduates from related fields may be required to take bridging and/or refresher courses.
- 2.3. He / She must be a graduate of MS Chemistry or allied field² and have completed 18 units of the following core courses:

CORE COURSES	UNITS
Advanced Inorganic Chemistry	3
Advanced Analytical Chemistry (lecture)	3
Advanced Analytical Chemistry (laboratory)	1
Advanced Organic Chemistry (lecture)	3
Advanced Organic Chemistry (laboratory)	2
Advanced Physical Chemistry	3
Advanced Biochemistry	3

- 2.4. He / She must pass the qualifying (Proficiency) examination in five fields (70% passing): Inorganic Chemistry, Organic Chemistry, Analytical Chemistry, Physical Chemistry and Biochemistry.
- 2.5. The Chemistry Graduate Program Coordinator (CGPC), in consultation with the Chemistry Graduate Committee evaluates the applicant's academic records and proficiency examination results to determine if he/she may be admitted to the PhD Chemistry program as a regular student or on probation. The committee may recommend bridging or refresher courses as needed.
- 2.6. Transfer of Credits:
A maximum of 6 units of lecture courses earned from an accredited and CHED recognized HEI may be credited/transferred provided the grade is not lower than 2.5. PhD thesis / dissertation units may not be transferred.
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¹ The Chemistry Graduate Committee is composed of all faculty members teaching graduate courses except those who are enrolled in the graduate program

² Allied fields: Biochemistry, Pharmaceutical, Agricultural, Molecular Biology/Biotechnology, Environmental Science, Food Science, and Chemical Engineering

3. PROGRAM REQUIREMENTS

Course Work	12 units
Graduate Seminar	4 units
Directed Research	0 unit
PhD Seminar (Candidacy Exam)	0 unit
Comprehensive Exam (3 written exam and 1 oral exam)	0 unit
Proposal Defense	0 unit
Dissertation	12 units
Total	28 units

Course Work (12 units) may be any graduate course in the student's field of specialization. New courses may be opened according to the expertise and availability of a faculty member. Special classes may be opened for elective courses.

3. RETENTION AND RESIDENCY

3.1. The student will be dismissed from the program if he / she incurs two (2) grades of "0.0".

3.2. An average of 2.5 from the grades obtained for every 3 – term period with no grade lower than 2.5 has to be maintained to stay in the PhD program.

- 3.3. The minimum residency for PhD is 3 years and maximum is 7 years. The residency may be extended for a maximum period of 5 years but the student must enroll in one 3-unit penalty course for every year of extension.
- 3.4. Shiftees must be in the program for a minimum of 2 years to graduate from the program.

4. RESEARCH/DISSERTATION

4.1. Ethics in research: the HEI, the dissertation mentor and the students must

- 4.1.1 practice integrity of research at all times;
- 4.1.2 maintain a safe and secure working environment;
- 4.1.3 establish ownership of research results before the project commences.

4.2. Change in dissertation mentor

This is highly discouraged. If this cannot be avoided the following should be observed.

4.2.1 The student must seek the advice of his / her Chemistry Graduate Advisory Committee (CGAC). The student and the Chair of his / her CGAC must then talk to the dissertation mentor. Once they come up with an agreement they must present this to the chemistry graduate program coordinator (CGPC) and the Department Chair. If there are sensitive issues involved and agreed upon they must be presented in written form and witnessed by the CGPC and the Department Chair.

4.2.2 If no settlement has been reached the case will be elevated to the CGPC and the Department chair. The following points may be considered:

- Who owns the research project?
- Can the student retain the research problem or not?
- Is monetary compensation required, e.g. has the research owner been committed to finish the project? Has money been spent by one party so that it has to be carried on to completion?
- Has the new mentor supervised a similar project before? Can the project owner entrust the student to a new mentor?
- Will the student defend a new proposal?
- Will the proposed change extend the student's time to finish the work?
- Is the student on scholarship? What are the implications of the proposed changes for the student's scholarship provisions?

4.3. Intellectual Property

Every member of a research group is expected to comply with the provisions of the student handbook, Appendix O, on Intellectual Property.

4.4. Directed Research

- 4.4.1 A PhD Chemistry graduate student may start working on his/her research project as indicated in his/her program of study by enrolling in Directed Research. Students are encouraged to enroll in Directed Research as early in their program as possible.
- 4.4.2 Directed Research will be offered every term. The course carries zero (0) unit; however, the student will be asked to pay for three laboratory units. The student may enroll in this course for an unlimited number of times until he/she becomes eligible to enroll in dissertation.
- 4.4.3 A student enrolled in Directed Research or Dissertation is required to present proof of his/her enrolment in this course before he/she is allowed to work in the laboratory.
- 4.4.4 Each research student must pass the Safety and Risk Assessment before he / she is allowed to work in the laboratory.

4.5. The Proposal Defense

- 4.5.1 Five dissertation panelists or examiners to include at most two external members must sit in a proposal defense. The Reader will serve as chair of the Panel of Examiners.
- 4.5.2 The chemistry graduate program coordinator (CGPC) will invite the prospective Reader stipulating his / her duties and responsibilities (CGP FORM 01A1).
- 4.5.3 The prospective Reader may indicate his/her willingness to examine the paper by returning Form (CGP FORM 01B1) to the CGPC.
- 4.5.4 The student submits a copy of the proposal to the Reader at least 3 weeks before the intended date of defense.
- 4.5.5 The Reader returns the Proposal examination report (CGP FORM 01C1) to the coordinator at most a week upon receipt of the manuscript
- 4.5.6 The CGPC invites the prospective panel members (CGP FORM 01A2); the panel members return to CGPC the conforme form (CGP FORM 01B2) before a copy of the manuscript is given; the Panel Member returns the Proposal Examination Report (CGP FORM 01C2) at most a week upon receipt of the manuscript. The Oral Proposal Defense schedule is then finalized
- 4.5.7 After the defense, the defense panel chair should submit the consolidated comments from the panel of examiners to the CGPC, the student's mentor, the student and all members of the panel.

4.6. Final Oral Defense

- 4.6.1 The five dissertation proposal panelists must preferably sit in the final oral defense. The Reader remains as chair of the Defense Panel.
- 4.6.2 The procedure followed will be the same as the proposal defense: the CGPC invites the reader (CGP Form 02A1); the reader returns the conforme form (CGP Form 02B1); and examines the manuscript
- 4.6.3 The student submits a copy of the manuscript to the Reader at least 4 weeks before the intended date of defense. The Reader is expected to return his/her comments (CGP FORM 02C1) to the CGPC within 1 to 2 weeks. The report is relayed to the student's mentor and the advisory board. The comment should also express the student's readiness to defend his work.

- 4.6.4 The CGPC will invite the panelists stipulating their duties and responsibilities (CGP FORM 02A2). Each prospective panelist indicates his/her willingness to examine the paper for the final oral defense by returning the conforme form (CGP FORM 02B2)
- 4.6.5 The panelists are provided with copies of the thesis manuscript for examination and the evaluation form (CGP FORM 02C2 Part 1). Results of the panel evaluation should be given to the Reader at most 4 days before the scheduled final defense.
- 4.6.6 The Panel Chair must provide the CGPC with a copy of the consolidated examiners' report prior to the defense. The CGP Coordinator relays the result to the Student's mentor and the advisory board. They in turn discuss it with the student prior to the student's final oral defense.
- 4.6.7 The student must submit a laboratory clearance to the CGPC before the final oral defense.
- 4.6.8 After the defense, the defense panel chair should submit the consolidated comments from the panel of examiners to the CGPC, the student's mentor, the student and all members of the panel.

5. SEMINAR

- 5.1. The objectives of the graduate seminars are: to train the student to carry out independent search of the literature, to expose the student to various areas of Chemistry, and to train him/her in the oral delivery of a technical paper.
- 5.2. Students must enroll in a maximum of 1 seminar per term. The seminar topics must cover 4 out of 5 fields of chemistry.
- 5.3. The course requirements are the following:
 - 5.3.1. presentation of a seminar on topic approved by the faculty in charge anytime between the 2nd to the 12th week of the term.
 - 5.3.2. printed copy of the seminar to be presented to be submitted to the department (faculty in charge, at least three days before the presentation). The manuscript must follow the prescribed Chemistry journal format.
 - 5.3.3. attendance in a minimum of 3 seminars within DLSU or outside DLSU as approved by the faculty in charge
 - 5.3.4. attendance in all seminars presented by other graduate students and those organized or sponsored by the chemistry department
 - 5.3.5. a seminar notebook where he/she lists and summarizes the dates, speakers, and contents of the seminars attended.
- 5.4. Seminar courses should be rotated among graduate faculty members, i.e. students should enroll in seminar courses with different faculty members (different fields) and not just his/her intended thesis adviser.
- 5.5. Grading is numerical and 30% of the grade will come from the assessment of the faculty members who attended the presentation.
- 5.6. The seminar is a formal event which is open to the public. A student presenter must have a minimum number of attendees at the seminar (at least 4 faculty members, including the seminar instructor, and 6 students) to receive credit for his/her presentation.
- 5.7. Students giving the seminar must make all the necessary arrangements, e.g. invitations, logistics, etc.

6. COMPREHENSIVE EXAMINATION

- 6.1. Of the four examinations, three are written exams on special topics assigned by the chemistry graduate advisory committee. The topics should be within the student's field of specialization (e.g. journal article, seminar topic). The fourth is an oral examination on the student's main field (organic, analytical, inorganic or physical chemistry). A panel of three (3) faculty members will sit as examiners.
- 6.2. The College and university policies on retake of comprehensive examinations will be followed.
- 6.3. A generic section for team-teaching will be created to facilitate the payment of fees for the examiners.

7. GRADES

- 7.1. The minimum grade with credit is 2.5.
- 7.2. Courses taken for personal enrichment including courses enrolled for comprehensive exam re-take are given a grade of AUDIT. Students taking Directed Research are also given a grade of AUDIT. Those taking Thesis/Dissertation are given a grade of 9.9 until the student completes all requirements.
- 7.3. Grades for penalty courses for re-admission should not be lower than 2.5
- 7.4. No incomplete grade is given for all graduate courses.
- 7.5. The deadline for submission of final grades and the grade consultation schedule follow that of the undergraduates. The department secretary will arrange the grade consultation schedule.

8. CANDIDACY EXAMINATION

- 8.1 The student must pass all of the four comprehensive examinations before taking the candidacy examination.
- 8.2 The candidacy examination must be passed before the final oral dissertation defense.
- 8.3 The candidacy examination is a research proposal presentation on a topic not related to the student's area of specialization. The CGPC must assign a minimum of three panelists, including the student's dissertation adviser, to examine the proposal and the student's ability to conduct independent and original study in any field of chemistry.

9. GRADUATION REQUIREMENTS

- 9.1.1. The student must submit a hard copy of the dissertation, a poster, and a published article in a reputable Science Journal to the department. Alternatively, a Letter of Acceptance may be submitted in place of the published article.
- 9.1.2. Registrar's requirements: 5 electronic copies (2 for the department and 3 for the Registrar's office), Signed Dissertation Approval Sheet with complete signatures, Defense Panel Report and a Panel Chair report regarding satisfactory revisions.

10. GENERAL POLICIES

10.1. Annual progress report

10.1.1. The student is required to submit a progress report at the end of every academic year. The report must include the following: grades, important milestones during the year, conformity with target schedules, research dissemination activities, and other achievements or activities done during the year.

10.1.2. The CGPC in consultation with the chair of the student's CGAC shall evaluate the report and assess it as very satisfactory, satisfactory, or unsatisfactory.

10.2. Functions of the Chemistry Graduate Committee

10.2.1. Formulate policies and guidelines to manage the program

10.2.2. Implement the program

10.2.3. Review and monitor the program regularly

10.3. Chemistry Graduate Advisory Committee (CGAC)

11.3.1. Sit with the student to prepare his/her program of study and submits this to Chemistry Graduate Program Coordinator. The study program must identify important achievements, markers and deadlines. The program of study may be amended upon consultation with the student's CGAC thru the chair and with the CGPC.

11.3.2. Work with CGPC to assess the annual report evaluation of the student

11.3.3. Attend to academic and non-academic concerns of the student

08 June 2015