State University of New York at Binghamton
Binghamton University

# Materials Science Program

**(Materials Science Track of the Materials Science and Engineeirng Program)**

# GRADUATE STUDENT HANDBOOK

# 2004-2008

**This Handbook is a supplement to the Graduate Student Handbook published by the Graduate School**

# Materials Science Graduate Program

**(Materials Science track of the Materials Science and Engineeirng Program)**

# RULES, REGULATIONS AND EXPECTATIONS

## A. The Graduate Program Committee

1. The Materials Science Program's *Graduate Program Committee* (GPC) has the responsibility for administering the PhD and MS degree programs. Its chair(s) is the Director(s) of the Materials Science Program. The chair(s) of the GPC does the following:

   (a) evaluates the curricular level of the incoming students,

   (b) makes recommendations for initial courses for the student,

   (c) acts as student advisor and approves the student's course program until a faculty research advisor is chosen (see below),

   (d) monitors the progress and performance of each student throughout the student's graduate program, by soliciting course evaluations, research progress evaluations from faculty; from the department the student is assigned teaching duties in, and research progress reports from the student,

   (e) keeps the students apprised of their academic status and, in the case of teaching assistants, of teaching performance,

   (f) adjudicates all student petitions (petitions should be directed to the chair of the GPC).

2. The chair(s) of the GPC will report to the GPC on the above, and will call meetings to advise and recommend on new student admissions, new courses, and on any other matters. The GPC can meet either in person or by phone or e-mail.

3. The GPC is made up of faculty representatives from all the participating departments, plus the directors of the Materials Science and Engineering Program and the Materials Engineering track..

## B. University Regulations

1. **GRE scores** are required for regular admission into a graduate program. The Program will not normally recommend admission without GRE scores. However, should it so decide then the Materials Science Program Director(s) are responsible for requesting a waiver from the Graduate School.

2. **The TOEFL Score** is required of all students whose native language is not English. The Materials Program requires a minimum score of 600 (or 230 on the computerized examination).

3. **Transfer Credit** is awarded by petition. Students matriculated in advanced degree programs may petition to have graduate credits from other institutions transferred toward their Binghamton masters' degrees. Credits cannot normally be transferred for doctoral degrees. Using the Graduate School's "Application For Transfer Credit" form, students submit this petition to their graduate program. The petition must include a copy of the official transcript from the other institution (if it is not already on file with the Graduate School).

   Courses transferred must be at the graduate level; a grade of B or better is required. Transferred courses can be used to fulfill the program's required number of courses but cannot be used in determining the GPA graduation requirement of at least 3.0; they also cannot be used to satisfy the residency requirement.

4. **Good Academic Standing**, defined as maintaining a 3.0 GPA in course work, must be maintained or the student may be placed on probation and ultimately dismissed. The student must also make satisfactory progress toward the degree; satisfactory progress includes course work and research work.

5. **Teaching Assistants**, in order to remain in good standing, must also perform their teaching duties satisfactorily. Teaching performance is an important part of the student's training program and the GPC will monitor the student's effectiveness closely. Unsatisfactory teaching will lead to loss of the assistantship.

6. **New York State Funds**, such as from a teaching assistant position, can usually be used to support a student for no more than two years in the Ph.D. program. MS students will not normally receive any support from New York State funds.

## C. Initial Course Placement

1. Entering students must demonstrate proficiency at the undergraduate level. Four options are available:

   (a) The Materials Science Program Director(s) will meet with each incoming student to evaluate their proficiency in materials science and engineering.

   (b) The Program Director(s) will then recommend to each student a series of courses for the first year.

   (c) This recommendation may include courses at the undergraduate level, if critical courses are missing from the student's background.

## D. Research Advisor

Each student in the Materials Science program must select and obtain the consent of a full-time participating faculty member to serve as his or her adviser. The student will work with the adviser to create a study plan and fill out a Proposed Course of Study Form. With the cooperation of the adviser, the student forms a research Committee to supervise the student's work. The research committee is composed of the adviser, a research-committee chair from another department and two other technically qualified members selected from faculty participating in the Materials program. The student then submits a Research Committee Registration Form and obtains the signed approval from the Materials Science Director.

The processes of adviser selection, study plan creation and research committee formation should be completed by the end of the student's first semester of full-time study. (For part-time students the process of adviser selection, study plan creation and research committee formation should be completed before the student has completed three graduate courses.)

## E. Course Requirements

Most of the basic courses in a student's program should be taken during the first year of residence, so that emphasis can be placed on the research in subsequent years.

Upon petition to the GPC, graduate courses previously taken elsewhere, or in another graduate degree program at Binghamton, may be used to satisfy the Materials Science course requirement in the MS and PhD programs. This procedure is not the same as receiving transfer credit (p. 2). Only those courses for which transfer credit has been approved by the Graduate Office will appear on the student's transcript.

Courses presented to satisfy degree requirements must have a grade average of at least 3.0.

# THE PhD PROGRAM

The PhD is awarded for original investigation leading to a significant advance of knowledge in a specialized area. Courses and seminars provide necessary background in the knowledge, basic principles, methods and theories of materials. The specific course requirements will be determined in consultation with the student's guidance committee, must be approved by the Graduate Program Committee, and will normally include those expected for the MS degree. In the course of their training, they are expected to demonstrate by appropriate examinations a breadth of knowledge in materials science; a perspective of the special relation of materials science to other fields of knowledge, particularly the fields of chemistry, engineering, geology, physics and biology; and competence in depth in a specialized area of materials. At the earliest date consistent with their general progress, students select a research topic and begin research (see below under "Research and Dissertation").

## Summary of Requirements

1. Normally six to eight courses, selected from at least three units.
2. Completion of 2 credits of Frontiers in Materials Science (MTLS 593) and 2 credits of Materials Research Communication (MTLS 592).
3. Passing of written examinations in the three core areas. Two attempts are permitted.
4. The public presentation of a written research proposal and its oral defense before the examination committee.
5. Completion of an original investigation in a specialized area of materials science.
6. Submission of a written dissertation and its oral defense.

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## A. Comprehensive Examination

Passing the comprehensive examination leads to the student being *admitted to candidacy*. It consists of two parts, a set of three written examinations (cums), and an oral examination of a research proposal.

1. Written examinations

   (a) These will be given within a single week twice a year. The student has the opportunity of taking the examination twice. Failure to pass after two attempts will result in dismissal from the program. If a student passes two out of the three examinations on the first attempt, then only the third examination need be attempted for a second time. Failure to pass two examinations on the first attempt will require the student to retake all three examinations.

(b) One examination will cover the area of the Solid State, both principles and practice..

One examination will cover the range of techniques using to study and characterize materials.

One examination will cover thermodynamics, phase equilibria and the reactivity of materials.

The area covered by these examinations is listed in Appendix 1.

Each examination will be three hours in duration, and will not require a student to answer more than 70% of the questions (i.e., three out of five, four out of six; five out of eight).

2. Oral Examination

(a) In the the comprehensive oral examination, the student will present and defend a research proposal based on the planned dissertation. The presentation should be around 20 minutes in length. The basics of the proposal will have been developed in the course MTLS 592.

(b) Each student should submit a written dissertation prospectus (research proposal) at least one week prior to the oral examination to each member of the examination committee and to the Program secretary. This prospectus should be in outline form, and from two to five pages long including the section for signature approval by the committee.

(b) The comprehensive oral examination is normally held within six months after the written examination requirement is satisfied.

(c) The Examination Committee will consist of at least four faculty members, one of which will be the dissertation research advisor. The committee will be chaired by a tenured faculty member from a department other than that of the student's dissertation research advisor.

(d) The student should confirm the membership of the committee with the dissertation advisor and Program Director(s); arrange for a date and time acceptable to committee members; reserve a room for the examination with the Program secretary; deliver an abstract (of around 200 words) to the committee members one week before the scheduled date; and deliver to the Program secretary a copy of the abstract, a list of the committee members, and the date, time and room number. The secretary will prepare a notice of the examination, send copies by email to all Program faculty members, and post notices in public places in Science I, Science II and Engineering.

## B. Admission to PhD Candidacy

On successful completion of the comprehensive examination, and of all required courses the Program Director(s) will recommend the student to the Graduate School for admission to candidacy.

## C. Dissertation Committee

The dissertation committee is normally the same as the comprehensive oral examination committee.

## D. Oral Dissertation Defense

(a) The dissertation defense committee will normally include the Dissertation Committee plus an outside examiner. In addition to the dissertation advisor, the committee will be chaired by a tenured faculty member who is not affiliated with the same department as the research advisor.

(b) Paper copies of the dissertation must be delivered to the members of the dissertation defense committee at least *two weeks* before the defense.

(c) The student should arrange for a date and time acceptable to committee members; reserve a room for the defense with the Program secretary; and deliver to the program secretary a list of the committee members, the title of the dissertation, and the date, time and place of the defense. The secretary will prepare a notice of the defense, send e-mail copies to all Program faculty members, and post notices in public places in Science I, Science II and Engineering.

(d) In the event of a conditional pass, the needed corrections are communicated in writing to the student by the committee chair. When completed, the revised dissertation will be submitted by the student to the committee chair, the advisor and those other members of the committee as determined by the committee at the conclusion of the orignal defense. The committee may, if deemed desireable, require an oral defense of the revised dissertation.

# THE MS PROGRAM

The master of science program satisfies the needs of students who desire a master's degree based primarily on coursework. However, students may also opt for a thesis track. The program also aims to accommodate the part-time student, and some courses will be offered at a distance. A candidate for the degree of master of science is expected to demonstrate a general knowledge in the field and the ability to do work in a specialized area of the field, leading to an acceptable project report or thesis. The program is guided by an adviser and the Graduate Program Committee until selection and approval of a research subject and adviser.

## Summary of Requirements

Students for the degree of master of science in materials science will normally complete the following requirements:

1. Completion of five and a half graduate courses (normally 22 credits), at least three of which must be from different departments. At least one course must be selected from each of the following areas:
   - solid state chemistry and/or physics (CHEM 544 or PHYS 572)
   - experimental techniques in materials science (MTLS 511 + 1/2 course from GEOL 583, CHEM 581C, BIOL 597, or other specialized techniques course)
   - thermodynamics, phase equilibria and reactivity of materials (MTLS 566, MTLE 560, or GEOL 528)
2. Participation for one semester in the Materials Research Communication seminar (MTLS 592).
3. Two semesters of Frontiers in Materials Science (MTLS 593).
4. Either (a) the completion of an acceptable research project and report (at least four credits of courses 597 and/or 598) or (b) the completion of an acceptable research project and thesis (at least eight credits of 598 and /or 599. Four of these credits may be counted toward the completion of the five and one half graduate courses indicated in part 1). [The research report will typically be 30-40 pages in length, whereas the thesis will typically be from 60-80 pages in length. Paper copies of the former will reside with the Program and the Research Advisor, whereas paper and electronic copies of the latter will be published just as for a PhD dissertation.]
5. Public presentation of a seminar on the subject of the research project or thesis, and its oral defense.
6. A total of at least 30 graduate credit hours obtained under the above requirements.

The examining committee for each candidate consists of three to five members appointed from the participating faculty by the Graduate Program Committee and will include faculty members from at least two departments. The student's advisor and committee chair will normally come from different departments.

# The 5 year Program in Chemistry and Materials Science & Engineering

## Summary of Requirements

The five-year program leading to a BS in chemistry and an MS in materials science in five years is planned to give all students a strong research background combined with a strong foundation in Chemistry and Materials Science. It requires completion of all components of the BS in chemistry with emphasis in materials. Participation in 3 semesters of laboratory/research work from 397, 445, 497, or 598 must be included within the existing BS requirements. In order to complete the 3:2 option, students are also required to complete all requirements of the MS degree in Materials Science including a thesis. 12 credits taken in the 4$^{th}$ year at the graduate level may be applied to both degree programs. Students in the combined program receive their BS degree after completing their undergraduate requirements.

Students are admitted to the combined program at any time up to the beginning of their senior year. Admission to the combined program will be limited to students who have a cumulative GPA of at least 3.0 in both the major and in all subjects. Students will have to maintain this GPA to stay in the program. In order to complete this program within five years, three courses for the BS in chemistry (with materials emphasis) are replaced by the more rigorous graduate course equivalents – e.g. Chem 411, 444 and 498 by 511, 544 and 598 and count toward both degree requirements. The BS in Chemistry in the combined program meets the certification requirements of the American Chemical Society for a BS Chemistry degree

# The 5 year Program in Physics and Materials Science & Engineering

## Summary of Requirements

The five-year program leading to a BS in physics and an MS in materials science and engineering is planned to give all students a strong research background combined with a strong foundation in physics and materials science. It requires completion of all components of the BS in physics. In order to complete the five-year option, students are also required to complete all requirements of the MS degree in materials science and engineering, including a thesis. Twelve credits taken in the fourth year at the graduate level may be applied to both degree programs. Students in the combined program receive their BS degree after completing their undergraduate requirements.

Students are admitted to the combined program at any time up to the beginning of their senior year. Admission to the combined program is limited to students who have a cumulative grade-point average of at least 3.0 in both the major and in all subjects. Students need to maintain this GPA to stay in the program. In order to complete this program within five years, three courses for the BS in physics are replaced by the more rigorous graduate course equivalents — e.g., PHYS 411, 472 and 498 by 511, 572 and 598 and count toward both degree requirements.

# Appendix 1

**Written Qualifying Examinations in Materials Science – Core Area Knowledge Base**

**Background:**

It is planned to examine all students in three core areas as listed below to confirm their competence for advanced PhD study. The core knowledge base will be common for all students. Instruction in the core area is provided by a core curriculum. Unless students have received equivalent training elsewhere, they must take courses in each of the core areas. Three or four courses should suffice to meet this level of competency, and the student would take the exam after 2 or 3 semesters. Students take additional courses in their area of specialization after consultation with their principal advisor.

**Core Areas:**

There are 3 core areas in Materials Science. These do not necessarily correspond exactly to any existing courses, as those are targeted at their home department majors.

- Materials structure, processes, and phenomena at the atomic level
- Experimental techniques for characterizing materials
- Thermodynamics, phase behavior and reactivity

**Materials structure, processes, and phenomena at the atomic level:**

- Bonding and atomic arrangement in solids; their impact on reactivity and properties.
- Introductory crystallography and diffraction techniques; introduction to symmetry and space groups
- Defects in solids (point and extended), and their impact on properties and reactivity
- Synthesis and reactivity of solids, use of phase diagrams and equilibria
- Introductory quantum mechanics and statistics of solids (wavelike properties of particles, Bohr model)
- Basic band theory, electrical, magnetic and optical properties of materials
- Polymers vs ceramics vs metals
- Dimensionality: 1d vs 2d vs 3d

(The level is that of Materials Science, 4$^{th}$ Edn 1999, J. C. Anderson et al, Chapman and Hall)

**Experimental techniques for characterizing materials:**

- An ability to choose the appropriate tool to solve the problem
- An appreciation of the strengths and weaknesses of each technique
- The student will not be expected to have a thorough understanding of the underlying physics and chemistry of the tool. That will be gained from specialized courses.
- Techniques included: diffraction methods (x-ray, neutron, electron), microscopy (optical, SEM, TEM, microprobe), spectroscopy (FTIR, UV/VIS, AFM, …), x-ray and electron spectroscopies (AUGER, EXAFS, EELS, ESCA….), chemical analysis (AA, DCP…..), thermal methods (TGA, DSC….), magnetic (EPR, NMR, susceptibility-SQUID)

(The level is that of Chem 511 – Techniques for studying Solids)

**Thermodynamics, phase behavior and reactivity:**

- Basic chemical and statistical thermodynamics.
- Phase diagrams and equilibria (including Ellingham diagrams)
- Synthesis and reactivity of solids, use of phase diagrams and equilibria
- Defects in Solids (including Kroger-Vink notation and equilibria diagrams)
- Diffusion and Ionic Transport
- Surfaces and Interfaces, adsorption and wetting behavior
- Phase transformation, energetics and kinetics of nucleation and growth of new phases
- Reaction Kinetics
- Metastable materials, including non-crystalline solids

(The level is that of 'Thermodynamics of Materials Vol II", David V. Ragone 1995 (MIT Series of Materials Science and Engineering, Wiley))

# Appendix 2

**State University of New York at Binghamton**
**Materials Science Ph. D. Program**

**LEARNING CONTRACT**

***PhD Student's Name:*** Jean Doe

***Date of Contract:*** August 28th, 2002

***Degree and Specialization Sought:*** PhD in Materials Science

***Evaluation Committee (Specify Chairman and Advisor, if known; they must be from different units/departments):***

| Name | Department | Organization |
|---|---|---|
| Dr. Y. Oshi (Advisor) | Mechanical Engineering | Binghamton University |
| Dr. James Brown | Physics | Binghamton University |
| Dr. Doreen O'Reilly | Materials Science | Binghamton University |
| Dr. Charles A. Smith (Chair) | Chemistry | Binghamton University |

(This committee will in most instances become the Dissertation Committee, with the addition of at least one external examiner; the Chair of the Committee must be a tenured faculty member at Binghamton University not in the Advisor's department/unit)

***Major Area of Research (100-200 words):***

In the last five years, mathematical models attempting to describe the growth of biological tissues have been developed. Due to the extremely complex nature biological systems, the resulting mathematical models are generally very involved, consisting of systems of nonlinear partial differential equations in evolving domains. This makes the solution and the validation of the model extremely difficult.

The goal of the proposed research is to develop a computational framework for simulating solid tumor morphology evolution using a mechanics based continuum modeling approach and nontraditional moving boundary techniques.

***Courses taken for Masters Degree applicable for Ph.D. Degree:***

| | Course # | Course Name | Credits | Grade |
|---|---|---|---|---|
| 1. | Chem Eng543 | Thermodynamics | 4 | |
| 2. | ME 535 | Analytical methods I | 3 | |
| 3. | ME 580C (Fall 2001) | Materials Engineering&Mechanics of Polymers | 3 | |
| 4. | PHYS 572 | Solid State Physics | 4 | |
| 5. | PHYS 511 | Statistical Thermodynamics | 4 | |
| 6. | ME 635 | Analytical Methods II | 3 | |

***Course Recommendations:***

| | Course # | Course Name | Semester | Credits | Grade |
|---|---|---|---|---|---|
| 1. | MTLS 511 | Techniques for studying solids | 1 | 4 | |
| 2. | CHEM 544 | Solid State Chemistry | 2 | 4 | |
| 3. | MTLE 560 | Thermodynamics of Materials | 3 | 3 | |
| 4. | PHYS 572 | Solid State Physics | 4 | 4 | |
| 5. | MTLS 566 | Reactivity of Solids | 2 | 4 | |
| 6. | CHEM 581C | Crystallography | 3 | 4 | |
| 7. | GEOL 583 | Electron Microprobe | 2 | 2 | |
| 8. | BIOL 597 | SEM/TEM | 3 | 2 | |
| 9. | CHEM 585P | Polymers | 4 | 4 | |
| 10. | MTLS 593 | Materials Communication Seminar | 1 | 2 | |
| 11. | MTLS 593 | Materials Seminar | 1 | 1 | |
| 12. | MTLS 593 | Materials Seminar | 2 | 1 | |

***Comprehensive Examination:***

The examination will consist of a written and an oral exam. The former will contain 3 major sections, covering solid state materials, analytical techniques, and thermodynamics and phase equilibria. The latter will cover these areas and will defend a written proposal for the PhD research project. The latter will be scheduled within 3 months of successful completion of the written examination.

***Teaching Requirements:***

At least one semester as a teaching assistant.

***Evaluation Procedures:***

The contract will be considered fulfilled upon meeting the following conditions:

- ✓ Completion of the required coursework while maintaining a minimum B average;
- ✓ Completion of the teaching proficiency requirement;
- Completion of the written and oral comprehensive exam as evaluated and agreed upon by the majority of the committee.

***Colloquium and Prospectus:***

A written proposal of the dissertation is to be submitted and presented for review to the committee for the oral comprehensive exam. Initial preparation of this proposal will begin in the course MTLS 592. Before successful defense of the proposal, a short prospectus will be written; this prospectus will be the basis for the dissertation and will include:

- Description of the topic and its relevancy;
- Literature review;
- A discussion of the problem;
- Research methods to be attempted;
- Listing of milestones and schedule for completion of the dissertation.

***Agreement by the Guidance Committee:***

By their signatures, the members of the guidance committee approve the learning contract.

1. Dr. Y. Oshi (Advisor) _____

2. Dr. James Brown _____

3. Dr. Doreen O'Reilly _____

4. Dr. Charles A. Smith
(Chair)

***Agreement to be Advisor:***

By signature, I agree to be the Advisor of this student

1. Dr. Y. Oshi (Advisor) _____ Date:

# Materials Program's Grievance Procedure For Graduate Students

The following grievance procedure is a two-stage process to resolve alleged unfair grading procedures or alleged unfair disciplinary action taken by a faculty member against a student, or other matters not already addressed by existing grievance procedures (cf. appendix). The first stage is comprised of several INFORMAL STEPS designed to reach mutual agreement between the parties. In the second stage, FORMAL STEPS are undertaken in which the complaint is considered by a GRIEVANCE COMMITTEE.

I. Informal:

A. The grievant should attempt to find satisfaction first by discussing the matter with the faculty member involved.

B. If no mutually agreeable resolution is reached during stage IA, the grievant may seek mediation through the Program Director. If the Director or Director's designee is the respondent, that is, the person against whom the grievance is directed, then to avoid a conflict of interest then another tenured faculty member will be the Mediator.

C. When complaints and concerns are resolved through the informal process to the satisfaction of both the grievant and the respondent, any written materials that may have been part of mediation shall be disposed of. The Program shall keep the original of any written agreement signed by both parties.

II. Formal:

A. Filing a Grievance:

* If the above-mentioned informal procedures do not result in a resolution, the grievant may file a formal written complaint, submitted to the Program Director (or another tenured Materials faculty member if the Director is respondent.)

* A formal complaint must be filed before the end of the semester following the semester during which the incident being grieved occurred. This time frame is in keeping with the university policy that "graded work not returned to students should be kept for one semester following the end of the course, to allow a means of evaluating the work of students who ask that a grade be reviewed." Summers do not count as semesters.

* Within ten working days of the receipt of the written complaint, the Director (or designee) will forward a copy of the formal complaint to the respondent(s), and may forward a copy to the Dean of the Graduate School (or Dean's designee). The Director also forwards copies to the members of the Grievance Committee along with a request that they convene a meeting.

B. The Grievance Committee:

* The Grievance Committee shall be a Program standing committee composed of three faculty and two students. The committee shall determine its chair.

* The Grievance Committee Chair will schedule the hearing within 30 working days from receipt of the complaint at a time which does not preclude the attendance of either party – save that the period between the end of the spring term and the beginning of the fall term shall not be counted and the first 15 working days of any semester shall not count toward the 30 days.

* Parties will be provided at least five working days notice of the hearing date.

C. The Hearing:

* The grievant and the respondent have the right to challenge the impartiality of any member of the committee. The other members of the committee shall decide by secret ballot whether that member shall be disqualified for that hearing. The grievant and the respondent have the right to bring one person (who is present in a non-participating capacity) to the hearing.

* A quorum shall consist of a majority of the members of the Grievance Committee with the proviso that at least one faculty and one student be present.

* Both parties shall be present during the hearing and may participate in parts one and two of the hearing. If either party is not present and there is reasonable doubt as to whether the notification of the hearing was received, the hearing should be postponed and a second notification should be made. At the beginning of the hearing the Chair should introduce all those in attendance, ask if anyone has questions about procedures, and assure both the grievant and respondent – that both may participate in parts one and two and that the hearing will not conclude until they are both satisfied that they have had ample opportunity to speak.

* The hearing shall consist of at least three parts:

1. The initial presentation of the grievance by the grievant followed by discussion focused on the grievance.

2. The presentation of the respondent's response to the grievance followed by discussion focused on clarifying the response.

3. The assessment of the evidence by the committee and the formulation of a recommendation to the concerned parties.

* No one other than committee members shall be present during part three and no new evidence may be introduced at that time.

* The Hearing should be tape recorded and written Minutes should be made with sufficient particularity to allow for review by the appeal agent.

D. Decision of the Grievance Committee:

* The decision of the committee will take place in part three of the hearing and shall be put in the form of a written recommendation to the Program Director (or designee if appropriate). The decision will be based on an open vote by all members of the committee in attendance. The recommendation shall be based on a vote of the majority of the members present. Those members of the committee who do not concur with the majority decision have the right to append a minority report to the recommendations.

* Within five working days of the hearing the Committee Chair will send a written report of the committee's recommendation to the Director of the Materials Program. The Program Chair will make his/her decision and within 10 working days after receipt of the committee's recommendation shall notify all parties, including the Dean of the Graduate School. This written decision will include a description of the appeal process:

* Within twenty working days of notification of an action at the department/program level either party may appeal to the Graduate Council Grievance Committee. (Graduate Grievance Procedures are outlined in the Graduate School Student Handbook). A student may appeal beyond the Dean to the Provost/Vice President for Academic Affairs if the appeal is based on due process. Under special circumstances the Dean may serve as the first level of appeal.

# APPENDIX

## Categories of Grievances at Binghamton

I. NON-ACADEMIC: "In charges brought against any SUNY-Binghamton student for alleged infractions of non-academic rules and regulations, the University judicial system adjudicates. Charges must be in writing and delivered in person or by certified mail to the college/community coordinator (residential cases) or the judicial affairs coordinator (nonresidential cases)." Complete procedures are in Rules & Expectations.

II. CONTRACTUAL: Faculty/Professional and Classified Staff Grievances: All Union agreements provide the procedure for grieving disputes concerning the interpretation, application or claimed violation of a specific term or provision of the contract, as well as for a claim of unjust discipline.

III. DISCRIMINATION: Binghamton University has adopted the grievance procedures entitled, "Grievance Procedure for Review of Allegations of Discrimination," established by the State University of New York, for "investigation and resolution of allegations of unlawful discrimination on the basis of race, color, national origin, religion, age, sex, disability, marital status, or sexual orientation." The Affirmative Action Office handles these complaints. Initial claims of discrimination may be handled in the department, however, formal charges of discrimination should be directed to the Affirmative Action Office.

IV. ACADEMIC:

A. Academic Dishonesty: Acts of academic dishonesty, including plagiarism, cheating on exams, etc are referred to the Academic Standards Committee for adjudication.

B. Research Misconduct: Acts of falsification of research data or of plagiarism in documents sent out of the university are referred initially to the Associate Vice President for Research.

C. Professional Standards Committee: This Faculty Senate Committee is charged to: "1) in cases which are not matters of grievance of discipline under provisions of the Collective Bargaining Agreement, to consider all sides of issues involving professional conduct, and to seek a resolution or to recommend appropriate action to assure high standards of professional conduct;" ["Faculty By-Laws" Article VIII, in Handbook for Faculty & Professional Staff].

D. Student Discipline Inside the Class: "Any instructor may exclude from attendance any student who, in the instructor's judgment, has seriously impaired the class's ability to achieve the objectives of the course. On the other hand, disciplinary action by a faculty member that the student considers arbitrary or unjust may be appealed. Schools and departments have established procedures for student grievances. [Handbook for Faculty & Professional Staff].

## Categories of Grievances at Binghamton
(continued)

D. Complaints Concerning Grades: The Bulletin states that "students wishing to register a complaint about alleged unfair grading procedures should speak with their instructor or the appropriate department chair." The Handbook for Faculty and Staff and the Rules and Expectations indicate that "each department or school has established procedures to handle grievances concerning grades and other academic concerns."