PLANT BREEDING & GENETICS (PBG)

PBG 199. SPECIAL TOPICS. (1-16 Credits)
Equivalent to: PBG 199H
This course is repeatable for 16 credits.

PBG 199H. SPECIAL TOPICS. (1-16 Credits)
Attributes: HNRS – Honors Course Designator
Equivalent to: PBG 199
This course is repeatable for 16 credits.

PBG 299. SPECIAL TOPICS. (1-16 Credits)
Equivalent to: PBG 299H
This course is repeatable for 16 credits.

PBG 299H. SPECIAL TOPICS. (1-16 Credits)
Attributes: HNRS – Honors Course Designator
Equivalent to: PBG 299
This course is repeatable for 16 credits.

PBG 399. SPECIAL TOPICS. (1-16 Credits)
Equivalent to: PBG 399H
This course is repeatable for 16 credits.

PBG 401. RESEARCH. (1-16 Credits)
This course is repeatable for 16 credits.

PBG 403. THESIS. (1-16 Credits)
Graded P/N.
This course is repeatable for 99 credits.

PBG 405. READING AND CONFERENCE. (1-16 Credits)
This course is repeatable for 16 credits.

PBG 405H. READING AND CONFERENCE. (1-16 Credits)
Attributes: HNRS – Honors Course Designator
Equivalent to: PBG 405
This course is repeatable for 16 credits.

PBG 407. SEMINAR. (1-16 Credits)
Graded P/N.
This course is repeatable for 16 credits.

PBG 408. WORKSHOP. (1-16 Credits)
This course is repeatable for 16 credits.

PBG 409. PRACTICUM IN TEACHING. (1-3 Credits)
Developing skills and competence in teaching under staff supervision; organization and presentation of instructional materials by assisting in laboratory, recitation, and lectures. CROSSTLISTED as ENT 509, CROP 509, SOIL 509.
Equivalent to: CROP 509, ENT 509, SOIL 509
This course is repeatable for 9 credits.

PBG 410. INTERNSHIP. (1-12 Credits)
Offered via Ecampus only.
This course is repeatable for 12 credits.

PBG 430. PLANT GENETICS. (3 Credits)
Introduction to the principles of plant genetics with an emphasis on the structure and function of economically important plant genomes.

PBG 431. PLANT GENETICS RECITATION. (1 Credit)
Review and demonstration of plant genetics principles.

PBG 441. PLANT TISSUE CULTURE. (4 Credits)
Principles, methods, and applications of plant tissue culture. Laboratory is important part of course. Topics include callus culture, regeneration, somaclonal variation, micropropagation, anther culture, somatic hybridization, and transformation. Lec/lab.

PBG 450. PLANT BREEDING. (4 Credits)
An introduction to the genetic improvement of self-pollinated, cross-pollinated, and asexually propagated species and the genetic principles on which breeding methods are based. Examples are drawn from a wide range of crops, including cereal grains, grasses, fruits, nuts, and vegetables; guest lecturers discuss their breeding programs. Additional topics include crop evaluation, germplasm preservation, disease resistance, and biotechnology. Lec/lab.

PBG 499. SPECIAL TOPICS. (1-16 Credits)
Equivalent to: PBG 499H
This course is repeatable for 16 credits.

PBG 499H. SPECIAL TOPICS. (1-16 Credits)
Attributes: HNRS – Honors Course Designator
Equivalent to: PBG 499
This course is repeatable for 16 credits.

PBG 501. RESEARCH. (1-16 Credits)
Graded P/N.
This course is repeatable for 16 credits.

PBG 503. THESIS. (1-16 Credits)
Graded P/N.
This course is repeatable for 999 credits.

PBG 505. READING AND CONFERENCE. (1-16 Credits)
This course is repeatable for 16 credits.

PBG 506. PROJECTS. (1-16 Credits)
This course is repeatable for 16 credits.

PBG 507. SEMINAR. (1-16 Credits)
Graded P/N.
This course is repeatable for 16 credits.

PBG 508. WORKSHOP. (1-16 Credits)
This course is repeatable for 16 credits.

PBG 509. PRACTICUM IN TEACHING. (1-3 Credits)
Developing skills and competence in teaching under staff supervision; organization and presentation of instructional materials by assisting in laboratory, recitation, and lectures. CROSSTLISTED as ENT 509, CROP 509, SOIL 509.
Equivalent to: CROP 509, ENT 509, SOIL 509
This course is repeatable for 9 credits.

PBG 510. INTERNSHIP. (4 Credits)
Offered via Ecampus only.
This course is repeatable for 12 credits.

PBG 513. PLANT GENETIC ENGINEERING. (3 Credits)
Principles, methods, and recent developments in the genetic engineering of higher plants. Offered alternate years.
Equivalent to: HORT 513

PBG 519. CURRENT TOPICS IN PLANT BREEDING AND GENETICS. (2 Credits)
Provides an advanced understanding of plant breeding and genetics and their relationship to other disciplines through critical analysis of the scientific literature. Students practice synthesizing information and presenting findings to peers. Instructors, topics, and specific learning objectives vary from term to term. CROSSTLISTED as HORT 519.
Equivalent to: HORT 519
This course is repeatable for 12 credits.

PBG 530. PLANT GENETICS. (3 Credits)
Introduction to the principles of plant genetics with an emphasis on the structure and function of economically important plant genomes.
PBG 541. PLANT TISSUE CULTURE. (4 Credits)
Principles, methods, and applications of plant tissue culture. Laboratory
is important part of course. Topics include callus culture, regeneration,
somaclonal variation, micropropagation, anther culture, somatic
hybridization, and transformation. Lec/lab. CROSSLISTED as MCB 541.
Equivalent to: MCB 541

PBG 550. PLANT BREEDING. (4 Credits)
An introduction to the genetic improvement of self-pollinated, cross-
pollinated, and asexually propagated species and the genetic principles
on which breeding methods are based. Example are drawn from a
wide range of crops, including cereal grains, grasses, fruits, nuts, and
vegetables; guest lecturers discuss their breeding programs. Additional
topics include crop evaluation, germplasm preservation, disease
resistance, and biotechnology. Lec/lab.

PBG 551. BREEDING CLONAL CROPS. (1 Credit)
The overall goal of the course is to gain fundamental knowledge of
breeding methods for clonal crops; these methods are different from
those used for seed-propagated crops. Specific examples from a wide
array of plant species (tree fruits, berries, tree nuts, potato, sweet
potato, cassava, cacao) will be provided to illustrate application of the
fundamental knowledge.
Prerequisites: PBG 450 with C or better or PBG 550 with C or better

PBG 556. CROP PLANT DOMESTICATION. (2 Credits)
Learning is based on discussion of the contemporary literature on crop
plant origins and domestication. The major agronomic and horticultural
crops will be covered. Topics include primary centers of domestication,
traits altered by domestication, effect of genetic architecture and local
ecology on domestication, and importance of genetic diversity to current
plant improvement efforts.

PBG 557. PLANTS AND PATENTS. (2 Credits)
Learn about different methods of intellectual property protection in
agriculture with a focus on plant patents, plant variety protection and
utility patents. The rights, current issues and restrictions that different
types of patents allow will be presented through reading the current
literature.

PBG 591. SELECTED TOPICS. (1-16 Credits)
This course is repeatable for 16 credits.

PBG 598. PLANT CHROMOSOME BIOLOGY. (3 Credits)
Exploration of the relationship between chromosome number, structure,
and behavior to gene inheritance, organization, and expression.
Discussion of chromosome manipulation strategies for genomics
research, genetic analysis, and plant breeding.

PBG 599. SPECIAL TOPICS. (1-16 Credits)
This course is repeatable for 16 credits.

PBG 601. RESEARCH. (1-16 Credits)
Graded P/N.
This course is repeatable for 16 credits.

PBG 603. DISSERTATION. (1-16 Credits)
Graded P/N.
This course is repeatable for 999 credits.

PBG 605. READING AND CONFERENCE. (1-16 Credits)
This course is repeatable for 16 credits.

PBG 607. SEMINAR. (1-16 Credits)
This course is repeatable for 16 credits.