

Readopt with amendment Ed 507.31, effective 10/16/09 (Doc #9566), to read as follows:

Ed 507.31 Life Sciences Teacher For Grades 7-12.

(a) To be certified as a life sciences teacher for grades 7-12, the candidate shall:

- (1) Meet the qualifications for certification as a science teacher as provided in Ed 507.29; and
- (2) Meet the requirements of (c) below.

(b) For candidates seeking certification under an alternative 3, 4, or 5 pathway, the department of education shall assess the skills, competencies, and knowledge of candidates for certification as life science teachers by reviewing evidence, such as, but not limited to, college course work, documented professional experience, letters of recommendation, professional development hours or CEU's, and artifacts of professional practice.

(c) A candidate for certification as a life sciences educator for grades 7-12 shall have skills, competencies, and knowledge in the following areas:

(1) In the area of fundamental content knowledge, the candidate shall have the ability to:

a. Explain concepts, solve problems, use models, and perform both field and laboratory experiences in the following fundamental areas of life science:

1. Structure and functions, from molecules to organisms, as follows:

- (i) Evidence for structure of DNA determining structure of proteins;
- (ii) Hierarchical organization of interacting systems; and
- (iii) Feedback mechanisms that ensure homeostasis, including, but not limited to human systems;

2. Inheritance and variation of traits as follows:

- (i) Role of mitosis to maintain complex organisms;
- (ii) Role of DNA and chromosomes in coding instructions that are passed through generations;
- (iii) New genetic combinations are a result of meiosis and mutations; and
- (iv) Statistics and probability to explain the variation and distribution of expressed traits;

3. Matter and energy in organisms and ecosystems as follows:

- (i) Role of photosynthesis, respiration, and fermentation in the needs of organisms as well as in the cycling of carbon in the biosphere, atmosphere, hydrosphere and geosphere;

- (ii) Carbon based molecules form the basis for life;
- (iii) Explain the cycling of matter and flow of energy in aerobic and anaerobic conditions; and
- (iv) Cycling of matter and flow of energy among organisms and ecosystems;
- 4. Interdependent relationships in ecosystems; and
- 5. Natural selection and evolution;
- b. Apply mathematical modeling, statistical concepts, and manipulation of variables as they apply to life science; and
- c. Explain and solve problems in life science, incorporating the fundamental concepts of chemistry, physics, and earth space science, including basic concepts and laboratory techniques.

Readopt with amendment Ed 612.25, effective 10/16/09 (Doc #9566), to read as follows:

Ed 612.25 Life Sciences For Grades 7-12. In addition to meeting the program requirements under Ed 612.23, the life science program for grades 7-12 shall provide the teaching candidate with the skills, competencies, and knowledge gained through a combination of academic and supervised practical experience as outlined in Ed 507.31(c).

**Appendix I**

<b>RULE</b>	<b>STATUTE</b>
Ed 507.31	RSA 186:8, III- IV, RSA 186:11,X(a)
Ed 612.25	RSA 186:8, IV; RSA 186:11, X(c)