

## Course Information and Syllabus

**Instructor:** Dr. Jon Scales  
**Lecture:** R 5:30-6:20 PM Rm: 215  
**Email:** [jon.scales@mwsu.edu](mailto:jon.scales@mwsu.edu)

**Office:** BO 218  
**Office Hrs:** see door card  
 or email for an appointment

### Course Materials:

**Text:** Science as a Way of Knowing: The Foundations of Modern Biology, John A Moore (1993).

### Philosophy:

The field of Biology is perhaps the broadest of the natural sciences. Biology has a long and storied history. This course aims to explore major paradigm shifts that have occurred throughout the history of this field. Undoubtedly, you already have an appreciation for Biology as it is your chosen field of expertise, but through this course, it is hoped that you will gain an even greater appreciation of the development of thought processes and advances that have occurred to advance our scientific field.

### Attendance:

Attendance is MANDATORY since the format of this course is group discussions on the student-lead presentations of topics from the textbook.

### Assignments & Examinations:

The course will consist of each student presenting/leading a discussion of a chapter from the text Science as a Way of Knowing.

Each student will prepare a short paper covering a historical aspect of biology not overtly presented in this book. Details on this paper will be provided separately. Each student will give a brief summary of their paper on the last scheduled class meeting period.

A single, online exam over the chapters of the text which are NOT discussed in class will be given.

### Grading and Point Assignments:

A ≥ 90	B ≥ 80	C ≥ 70	D ≥ 60	F < 60
	Discussion Leadership -----	50%		
	Discussion Participation -----	20%		
	Exam -----	10%		
	Paper -----	20%		

### Rules & Regulations:

Students should refer to the current MSU handbook and activities calendar for university policy on academic dishonesty, class attendance, student rights and activities.

Cheating of any kind will result in no credit for that assignment, quiz, or exam. Repeated offense will result in dismissal from the course with a grade of F.

Students displaying disruptive behaviors will be reported to the Office of Students Rights and Responsibilities. Disruptive behaviors are grounds for dismissal from the course as noted in the student handbook p27:

#### Instructor Drop

An instructor may drop a student any time during the semester for excessive absences, for consistently failing to meet class assignments, for an indifferent attitude, or for disruptive conduct. The instructor must give the student a verbal or written warning prior to dropping the student from the class.

A student dropped from a class by a faculty member for disruptive behavior has the right of appeal to the Student Conduct Committee through the Office of Student Rights and Responsibilities (CSC 108).

**The above paragraphs serve as your one and only verbal and written warning.**

Students that have been certified through the office of Disability Services with disability accommodations must provide documentation from that office. Students must abide by all published procedures for taking **exams** through the DSS office with accommodations.

#### Tentative Topic Schedule

Week		Lecture Topic	Chapter	Discussion Leader
<b>1</b>	Aug 31			
<b>2</b>	Sep 7	The Antecedents of Scientific Thought	<b>1</b>	Shiple
<b>3</b>	Sep 14	Aristotle & the Greek View of Nature & Rational Greeks	<b>2 &amp; 3</b>	Scales
<b>4</b>	Sep 21	Testing Darwin's Hypothesis	<b>8</b>	Hannah Jones
<b>5</b>	Sep 28	Life Over Time	<b>10</b>	Gage Magargee
<b>6</b>	Oct 5	The Cell Theory	<b>12</b>	Uyen Tran
<b>7</b>	Oct 12	Mendel and the Birth of Genetics	<b>14</b>	Gage Magargee
<b>8</b>	Oct 19	The Genetics of the Fruit Fly	<b>16</b>	Scales
<b>9</b>	Oct 26	The Structure and Function of Genes	<b>17</b>	Nakitha Allam
<b>10</b>	Nov 2	The Century of Discovery	<b>19</b>	Uyen Tran
<b>11</b>	Nov 9	Descriptive Embryology	<b>20</b>	Hannah Jones
<b>12</b>	Nov 16	The Dawn of Analytical Embryology	<b>21</b>	Nakitha Allam
<b>13</b>	Nov 23	THANKSGIVING		
<b>14</b>	Nov 30	The Revolution in Biology & The Modern Synthesis:		Scales
<b>15</b>	Dec 7	Papers Presentations		

Potential Discussion Topics (Choose 3) (these are the chapters of the text)  
Each topic must come from a different PART of the text.

#### PART ONE: UNDERSTANDING NATURE

~~Chap 1: The Antecedents of Scientific Thought~~ —Dr. Shipley

~~Chap 2: Aristotle and the Greek View of Nature~~ Dr Scales

Chap 3: Those Rational Greeks

Chap 4: The Judeo-Christian Worldview

Chap 5: The Revival of Science

Chap 6: Figur'd Stones and Plastick Virtue

#### PART TWO: THE GROWTH OF EVOLUTIONARY THOUGHT

Chap 7: The Paradigm of Evolution

Chap 8: Testing Darwin's Hypothesis

Chap 9: In the Light of Evolution

Chap 10: Life over Time

#### PART THREE: CLASSICAL GENETICS

Chap 11: Pangenesis

Chap 12: The Cell Theory

Chap 13: The Hypothesis of Chromosomal Continuity

Chap 14: Mendel and the Birth of Genetics

Chap 15: Genetics + Cytology: 1900-1910

Chap 16: The Genetics of the Fruit Fly

Chap 17: The Structure and Function of Genes

#### PART FOUR: THE ENIGMA OF DEVELOPMENT

Chap 18: First Principles

Chap 19: The Century of Discovery

Chap 20: Descriptive Embryology

Chap 21: The Dawn of Analytical Embryology

Chap 22: Interactions during Development