**KEMENTERIAN RISTEK DAN PENDIDIKAN TINGGI**

**UNIVERSITAS NEGERI YOGYAKARTA**

**PROGRAM PASCASARJANA**



**RENCANA PROGRAM SEMESTER**

1. **Identitas Mata Kuliah**

Program StudI : IP/Pendidikan Biologi S-3 Kode: Bi9279 sks: 2 (2T)

Nama Mata kuliah : Isu & Tren Penelitian Pendidikan Biologi

Semester : 3

Prerekuisit : Biologi Umum, Pendidikan Biologi S-1

Dosen : Dr. Slamet Suyanto, M. Ed.

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1. **Deskripsi Mata Kuliah**

Mata kuliah Isu & Trend Penelitian Pendidikan Biologi S-3 membahas isu-isu penelitian terkait kebijakan, materi, guru, siswa, maupun teknologi Pendidikan Biologi terkini. Mahasiswa program doktoral (S-3) pendidikan biologi diharapkan memiliki wawasan penelitian terkini mengenai empat komponen Pendidikan Biologi yang meliputi Guru, Teknologi, Siswa, dan Biologi. Kegiatan pembelajaran meliputi kajian buku, dokumen kebijakan, dan jurnal penelitian Pendidikan Biologi. Mahasiswa diharapkan menggunakan ICT untuk mencari informasi, presentasi, dan komunikasi dalam perkuliahan pendidikan biologi.

1. **Learning Outcomes**

##### Memahami ruang lingkup penelitian Pendidikan Biologi.

##### Memahami isu-isu penelitian tentang guru biologi terkini.

1. Memahami isu-isu penelitian tentang program penyiapan guru biologi.
2. Memahami isu-isu penelitian tentang materi/bahan ajar biologi.
3. Menguasai isu-isu penelitian Media Pembelajaran biologi.
4. Menguasai isu-isu penelitian Sumber Belajar biologi.
5. Menganalisis isu-isu penelitian tentang siswa dan psikologi belajar biologi.
6. Memahami isu-isu penelitian tentang teknologi pembelajaran biologi.
7. **Kegiatan Perkuliahan**

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| **Pertemuan ke:** | **Capaian Pembelajaran** | **Bahan Kajian** | **Model Pembelajaran** | **Pengalaman Pembelajaran** | **Indikator** | **Teknik** | **Bo-bot** | **Waktu** | **Reference** |
| **1-2** | Memahami ruang lingkup penelitian Pendidikan Biologi. | Isu dan tren terkait Pendidikan Biologi | Group Discussion | Membaca artikel dan diskusi | Mengidentifikasi 4 komponen Pendidikan Biologi | Quiz | 10% | 200’ | A, E |
| **3-4** | Memahami isu-isu penelitian tentang siswa dan belajarnya | Isu dan tren terkait dengan siswa, brain-based learning, neuroscience, metacognition | Group Discussion | Mengkaji penelitian terkait cognition and metacognition | Laporan hasil kajian ttg siswa dan belajarnya | Penilaian produk (Laporan)  Dan presentasi | 10% | 200’ | C, E, J |
| **5-6** | Memahami isu-isu penelitian tentang program penyiapan guru biologi | Isu dan tren terkait dengan Teacher Professional Development | Group Investigation | Mengkaji kebijakan ttg guru biologi dan kompetensinya | Laporan hasil kajian ttg kebijakan terkait guru dan kompetensinya | Penilaian produk (Laporan)  Dan presentasi | 10% | 200’ | C, E, J |
| **7-8** | Memahami isu-isu penelitian tentang materi/bahan ajar biologi & concept map. | Isu dan tren bahan ajar biologi dan concept map | Group Investigation | Mengkaji isu dan tren penelitian biologi | Laporan hasil kajian ttg isu dan tren tentang penelitian biologi | Penilaian produk (Laporan)  Dan presentasi | 10% | 200’ | C, H, I |
| **9-10** | Menguasai isu-isu penelitian Media Pembelajaran biologi. | Isu dan tren media pembelajaran biologi | Group Investigation | Mengkaji isu dan tren media pembelajaran biologi | Laporan hasil kajian ttg isu dan tren media pembelajaran biologi | Penilaian produk (Laporan)  Dan presentasi | 10% | 200’ | A, C, H, I |
| **11-12** | Menguasai isu-isu penelitian Sumber Belajar biologi. | Isu dan tren sumber belajar biologi, learning centre biologi | Group Investigation | Mengkaji isu dan tren Sumber Belajar biologi. | Laporan hasil kajian ttg isu dan tren Sumber Belajar biologi. | Penilaian produk (Laporan)  Dan presentasi | 10% | 200’ | A, D, E |
| **13-14** | Menganalisis isu-isu penelitian tentang kurikulum biologi | Kurikulum 2013,  NGSS  STEM | Group Investigation | Mengkaji isu dan tren pengembangan kurikulum | Laporan hasil kajian ttg isu dan tren ttg kurikulum | Penilaian produk (Laporan)  Dan presentasi | 10% | 200’ | C, F, G |
| **15-16** | Memahami isu-isu penelitian tentang teknologi pembelajaran biologi. | Desain Sistem instruksional,  Pemanfaatan ICT, | Group Investigation | Mengkaji isu dan tren ttg Instructional System Design dan teknologi pendidikan biologi | Laporan hasil kajian ttg isu dan tren ttg teknologi pembelajaran biologi | Penilaian produk (Laporan)  Dan | 10% | 200’ | D, B, G |

1. **Penilaian:**

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| **Tugas** | **Diberikan** | **Dilaksanakan** | **Bobot (%)** |
| 1. Partisipasi dan Kuis | 1-9-2015 | 30-9-2015 | 20 |
| 1. Tugas-tugas terstruktur | 1-10-2015 | 30-10-2015 | 60 |
| 1. Ujian Akhir Semester | 1-11-2015 | 10-12-2015 | 20 |
| Total | | | 100 |

**Nilai Akhir = (Nilai Tugas x 60%) + Nilai UAS (40%)+Partisipasi (10%)**

**100**

1. **References:**

**Compulsory:**

1. Allen D and Tanner K. 2015. Approaches to biology teaching and learning: From a scholarly approach to teaching to the scholarship of teaching. *Cell Biology Education* 4(1):1-6
2. Allen D and Tanner K. 2013. Approaches to cell biology teaching: Learning content in context--problem-based learning. *Cell Biology Education* 2(2):73-81.
3. BSCS (2006). *Biological Science Curiculum Study*. North Carolina: BSCS.
4. [Neil Campbell](http://www.pearsoned.co.uk/bookshop/Results.asp?iCurPage=1&Type=1&Author=Neil+Campbell&Download=1&SearchTerm=Neil+Campbell), [Jane B. Reece](http://www.pearsoned.co.uk/bookshop/Results.asp?iCurPage=1&Type=1&Author=+Jane+B%2E+Reece&Download=1&SearchTerm=+Jane+B%2E+Reece), [Lisa Urry](http://www.pearsoned.co.uk/bookshop/Results.asp?iCurPage=1&Type=1&Author=+Lisa+Urry&Download=1&SearchTerm=+Lisa+Urry), [Michael Cain](http://www.pearsoned.co.uk/bookshop/Results.asp?iCurPage=1&Type=1&Author=+Michael+Cain&Download=1&SearchTerm=+Michael+Cain), [Steven Wasserman](http://www.pearsoned.co.uk/bookshop/Results.asp?iCurPage=1&Type=1&Author=+Steven+Wasserman&Download=1&SearchTerm=+Steven+Wasserman), [Peter Minorsky](http://www.pearsoned.co.uk/bookshop/Results.asp?iCurPage=1&Type=1&Author=+Peter+Minorsky&Download=1&SearchTerm=+Peter+Minorsky), [Robert Jackson](http://www.pearsoned.co.uk/bookshop/Results.asp?iCurPage=1&Type=1&Author=+Robert+Jackson&Download=1&SearchTerm=+Robert+Jackson) (2014). [*Biology: A Global Approach, Global Edition*](http://www.pearsoned.co.uk/bookshop/detail.asp?item=100000000531581). 10th Edition.Benjamin-Cummings Publishing Company

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1. Bestelmeyer SV, Elser MM, Spellman KV, Sparrow EB, Haan-Amato S, Keener A. 2015. Collaboration, interdisciplinary thinking, and communication: New approaches to K--12 ecology education. *Frontiers in Ecology & the Environment* 13(1):37-43
2. Blatt EN. 2015. An investigation of the goals for an environmental science course: Teacher and student perspectives. *Environmental Education Research* 21(5):710-33.
3. Brewer CA. 2004. Near real-time assessment of student learning and understanding in biology courses. Bioscience (11):1034
4. Clark IE, Romero-Calderón R, Olson JM, Jaworski L, Lopatto D, Banerjee U. 2009. "Deconstructing" scientific research: A practical and scalable pedagogical tool to provide evidence-based science instruction. *PLoS Biology* 7(12):1-4.
5. More, Kenneth D. (2005). *Effective Instructional Strategies*. Thousand Oaks, California: Sage Publications.
6. Slamet Suyanto (2014). *Pendidikan Biologi*. Yogyakarta: Universitas Negeri Yogyakarta.

**Additional reading**:

1. Dresner M, De Rivera ,Catherine, Fuccillo KK., Chang H. 2014. Improving higher-order thinking and knowledge retention in environmental science teaching. *Bioscience* 64(1):40-8.
2. Kazempour M and Amirshokoohi A. 2013. Reforming an undergraduate environmental science course for nonscience majors. *Journal of College Science Teaching* 43(2):54-9.
3. Kober N. 2015. Reaching students: What research says about effective instruction in undergraduate science and engineering | the national academies press <http://www.nap.edu/catalog/18687/reaching-students-what-research-says-about-effective-instruction-in-undergraduate> ed. Washington, D.C. USA: National Academies Press.
4. Martello R, Brabander D, Gambill I. 2014. Paradigms, predictions, and joules: A transdisciplinary, project-based course approach to sustainability. *Council on Undergraduate Research Quarterly* (1):20
5. McWilliam E and Dawson S. 2008. Teaching for creativity: Towards sustainable and replicable pedagogical practice. *Higher Education* 56(6):633-43.
6. McWilliam E, Poronnik P, Taylor PG. 2008. Re-designing science pedagogy: Reversing the flight from science. *Journal of Science Education and Technology* 17(3):226-35.

Websites:

1. <http://www.sscs.org/>
2. <http://www.learningstyleinventory.com/>

Yogyakarta, 10 Agustus 2015

Mengetahui Dosen,

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